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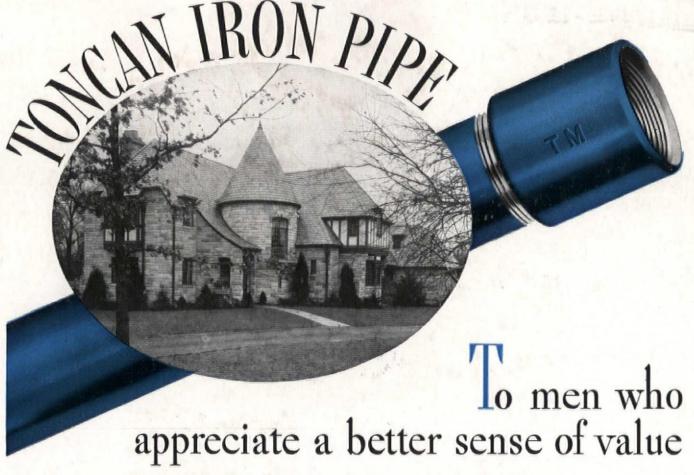
ARCHITECTURAL

FORUM

THE FIVE THOUSAND DOLLAR HOUSE

APRIL, 1936

BUILDING MONEY: BUILDING FORECAST . . . FREED PLAN . . . HOUSING DECISION



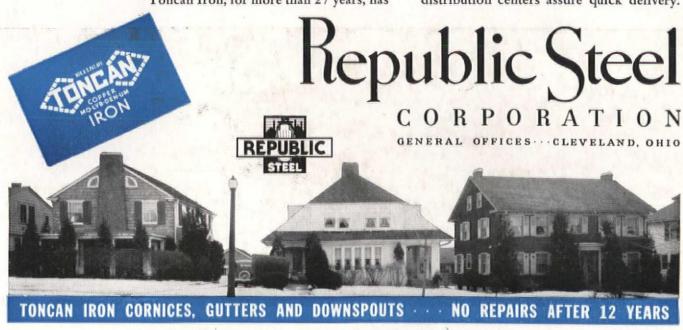
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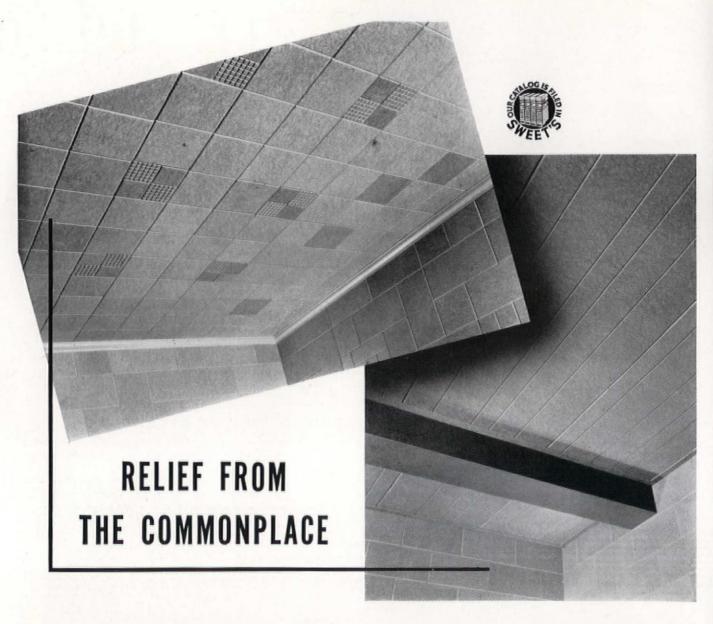
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APRIL 1936

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THE ARCHITECTURAL FORUM

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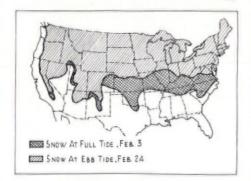
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VOLUME LXIV

THE MONTH IN BUILDING

VOLUME. A five-year record rise in the dollar value of applications filed for residential building permits was broken in February, despite that month's extreme cold and record snows. Adjusted Department of Labor figures for February showed a gain of several thousand dollars over last year's high month of October. These figures set February permits for all types of building at \$76,555,000, or 1.4 per cent less than the January 1936 total, but 93.0 per cent higher than the February 1935 total (see chart, p. 52).

Actual construction in February, as recorded by the F. W. Dodge Corp. for 37 States East of the Rockies, dropped 30 per cent under January. But this drop was



Snow Coverage in February

not so severe in the case of residential building, reaching only 19 per cent. These figures of course fail to account for activity on the West Coast, which was free from the hampering effect of the February snows. The worst in years, these extended from the Sierras eastward, leaving only six southeastern States untouched. This area remained covered until the latter part of the month when the snow gradually began to ebb (see map).

Meantime Dun & Bradstreet figures, again for permits, recorded a 6.5 per cent drop for total building in the 215 largest cities. The only figures including a geographical breakdown, these showed:

Cha	nge Over 193
New England States	+ 16.8%
Middle Atlantic States.	+ 65.9%
South Atlantic States	+ 77.4%
East Central States	+ 31.0%
South Central States	+358.0%
West Central States	+108.8%
Mountain States	+ 82.6%
Pacific States	+ 48.1%

As for progress by building types, the Labor figures showed residential permits 15.0 per cent up from January, 253.5 per cent up from February, 1935. Non-residential permits were 11.7 per cent down from January, 192.9 per cent up from 1935. Similarly remodeling permits fell 10.0 per cent from January, were 27.5 per cent over 1935. Vastly improved were the Labor figures with the surprise inclusion of reports from 1,415 cities with over 2,500 population, instead of the usual 790 cities with over 10,000.

FLOOD. Torrential rains fell on snow (see above) last month. Melting, the snow coursed with the rain to cause the worst flood of the century. Eighteen feet of water hit Johnstown, Pa. The flood-crest ran south through Pennsylvania, hit the Ohio Valley, spread East to Maryland and West Virginia. Fifteen hundred WPA workers began building a dyke in Washington to keep the Capitol dry. At the same time New England and upper New York experienced a repetition of the drastic floods of last year. Hartford, insurance center of the U.S., found that its own citizens had hardly a penny of flood insurance to cover a \$25,000,000 loss. And in the committee room of the Board on Rivers and Harbors in Washington engineers from New York and Pennsylvania found an unexpected argument to back the plea they were making against the Board's reduction of flood control appropriations. Week later, flood waters seeped into the Middle West, while cold and epidemics hit the East.

In Pittsburgh, steel capitol of the nation, 40,000 men were thrown out of work when the Homestead, Clairton, and Duquesne plants closed down. Also crippled were the Carnegie-Illinois plant in Ohio, National Steel's Weirton plant, Wheeling Steel Corp.'s plant. Total damage for the floods was conservatively estimated at \$500,000,-000. Probably better than half this sum can be chalked up to destruction of goods, crippling of equipment, loss of time. Residential loss was spectacularly featured in the Press, but estimators remembered that a house can be flooded without permanent damage. Thus while 500,000 people have been reported homeless, it is probable that a great many of them will be able to return to their houses. More serious and calling for immediate outlay of cash was the breakage and defacement on such commercial properties as stores, restaurants, and banks. To the building industry, on the verge of a Spring-time boom, there was presented the immediate prospect of helping the East build anew after one of the most extensive catastrophes in the country's history. Self-starter for this boom was a \$25,000,000 Federal outlay for flood relief.

FARCE. "A mess" said President Roosevelt one morning last month when newshawks asked him about the Housing program. With news stories out of Congress at their lowest ebb in twenty-five years, the Press flooded its front pages with dope stories on the progress of this program, went off on many an obfuscating tangent. Root of the mess, however, was clear to everybody. The Central Housing Committee, composed of the titular head and one expert from each Government housing agency, had wrangled for months to frame a long-term housing policy on which all could agree, and had failed miserably.

With his "informal group," drafted to recommend immediate legislation, the President had better luck. Composed of Peter Grimm (acting for Secretary Morgenthau), FHA Chairman McDonald, RFC Chairman Jones, FHLB Governor Preston Delano, FHLB Chairman Fahey, Federal Reserve Governor Eccles, Federal Reserve Expert Daiger, Senator Wagner,



Harris & Ewing

Reserve's Daiger

and PWA's Clas, the "informal group" had concentrated on FHA to evolve by the end of last month at least one clear-cut piece of legislation—continuance of Title 1 of FHA.

If passed in its present form the amendments will continue Title 1 to April 1, 1937, limit its application to real estate alone. Dropped will be its power to underwrite equipment for the home. Furthermore the Government will agree to make good losses on Title 1 only up to ten per cent, and not as formerly, up to twenty. Loans on industrial plant modernization up to

\$50,000 will be continued.

Less sure of passage, but well favored in Washington housing circles, were the following items: 1) insurance of 90 per cent mortgages on houses costing less than \$5,000, the insurance to be applied to the appraised value or the purchase price, which is lower; 2) extension of FHA's little-used power to insure large scale housing developments, by making it applicable to houses for sale as well as rental projects in the under-\$5,000 class.

Week after the President threw up his hands about housing, Liaison Officer Peter Grimm handed in his long-expected resignation, left for a ten day rest in Florida sunshine. Behind him he left a reputation for conscientious effort, personal charm, and disillusionment. Imported from Manhattan to interpret housing to the White House, he stayed to become the coordinator between the Government and Building. His widely heralded report and recommendation for the housing program never appeared in formal document, remains today in the obscurity of a memorandum to the President.

Grimm's departure brought to the fore more clearly than ever before one of Washington's most retiring men-J. M. ("Matt") Daiger, onetime head of a financial advertising agency, authority on finance, and currently special assistant to the Federal Reserve Board. Erroneously reported successor to Peter Grimm's position. Daiger will however step more completely into the housing picture than ever before. His duties: liaison officer and clearing agent for the "informal housing committee," and Congressional interpreter of any housing measures the committee may evolve in the future. To this group Daiger and his work on the drafting of such important pieces of legislation as the National Housing Act, and the Banking Act of 1935 are well known and respected. He seems an intelligent choice for the post he is to fill, should do much to clarify the sometimes murky thinking of Washington Housers on the subject of finance-inhousing.

HOUSING SUITS. Twin hangovers from the days when PWA insisted on linking its low-rent housing program with slum clearance are two adverse decisions in Detroit and Louisville courts, denying the right of the Federal Government to exercise the power of eminent domain to further housing. Last month on the advice of Legalite Tom Corcoran, the Department of Justice, acting for PWA, withdrew its appeals to the Supreme Court in these cases, fearing, with some justification, an adverse verdict.

Meanwhile in New York the Court of Appeals upheld the constitutionality of the State Housing law in a case testing the right of the local Housing Authority to condemn land for slum clearance. Point of the verdict was that slums constituted a condition that could not be remedied by the regular operations of private enterprise, that they therefore fell clearly within the police powers reserved to the States. "The Legislature" observed the Court in its opinion, "has resorted to the last of the trinity of (its) sovereign powers by giving to a city agency the power of eminent domain."

For a full text of the decision, see page 142.

Significance of the Federal retreat and the State victory for Housers was its clarification of proper housing procedure. With the New York ruling as precedent it becomes obvious that if slum clearance and metropolitan low-rent housing are to be pursued, their programs will be legally secure only so long as they are operated under local jurisdictions and authorities. This is the view which, despite the presence on the dockets of the Louisville and Detroit cases, the Federal Government has itself latterly acknowledged as the most feasible, and the one which it would like most to see incorporated in any future housing bill.

HOOVER ON INVESTMENTS.

Declining yields on bonds and mortgages have been especially worrisome in recent years to that large class of trustee investors whom mortgage men call "charities." Churches, universities and foundations compose this rich and powerful group. Churches like New York's Trinity, schools like Chicago University own much real estate, but cannot invest new funds in it, other than for upkeep.

Last month in a San Jose, Calif., court a chubby-faced witness uprose to argue that the law governing Stanford University's investing policy should be amended to permit the purchase of common stock and real estate. "The problem has only recently arisen," said Trustee Herbert Clark Hoover. "For 50 years both prudence and wisdom have caused the trustees to invest the endowment, now amounting

to some \$24,000,000, in seasoned bonds and first mortgages." Calling up dollar devaluation, bank credit inflation and the "menace" of currency inflation, Trustee Hoover warned that "the record of similar institutions in Europe under currency inflation is before us, where their endowments are largely wiped out . . . While common stock, real estate and other equities are subject to risk, yet this [stock and real estate investment] may be the lesser risk than bonds and mortgages."

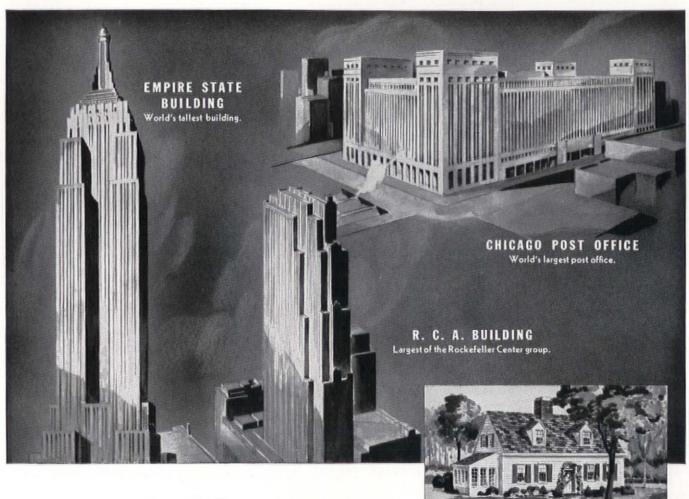
1935 LENDING. Commentary on the large transfer of home lending activity from Government to private sources was a set of figures released last month by the Federal Home Loan Bank Board on mortgage financing of single-family homes over the past three years. Recession of the Home Owners Loan Corp. as an active lender and the comeback made especially by the building and loan associations were the principal revelations.

FHLB's estimates placed total home lending in 1933 at \$673,000,000, in 1934 at \$2,512,000,000 and in 1935 at \$1,712,000,000. Biggest of these years, 1934, was the lowest for new construction loans, which amounted to \$129,000,000 in 1933, \$110,000,000 in 1934 and \$292,000,000 in 1935. This difference was accounted for by HOLC, which reached the height of its mortgage-distress lending in 1934 with 80 per cent of the total. This figure declined to less than 50 per cent in 1935.

About 55 per cent of the estimated \$220,000,000 total mortgage loans made by all private institutions in 1935 for new small home construction, and excluding \$60,000,000 of loans made on new homes by individual lenders, were placed by the 3,500 member institutions of the Federal Home Loan Bank System. These member institutions, mostly building and loan associations, last year made total home loans in the amount of \$347,000,000 or about 44 per cent of the 1935 total.

Type of Lender	Mortgage Loans Outstanding	LENT FOR REFINANCING	LENT FOR NEW CONSTRUCTION
HOLC Federal Savings and Loan	\$ 2,860,000,000	\$ 816,000,000	
Associations	350,000,000	56,000,000	\$ 76,000,000
FHLB System	1,618,300,000	168,000,000	57,000,000
Building and loan associations not members of FHLB Sys-			
tem	1,800,000,000	76,000,000	24,000,000
Mutual Savings Banks	3,121,000,000	39,000,000	12,000,000
National Banks	432,400,000	70,000,000	20,000,000
State Banks	223,650,000	32,000,000	8,000,000
Loan and Trust Companies	460,000,000	37,000,000	8,000,000
Stock Savings Banks	131,000,000	7,000,000	2,000,000
Private Banks	2,000,000	100,000	25,000
Life Insurance Companies Real Estate and Bond Com-	1,450,000,000	43,000,000	17,775,000
panies	1,806,000,000	21,000,000	6,000,000
Title and Mortgage Companies.	165,000,000	5,000,000	1,000,000
Individual Lenders	2,800,000,000	50,000,000	60,200,000
TOTAL	\$17,219,350,000	\$1,420,100,000	\$292,000,000

FHLB Breakdown of Mortgage Financing



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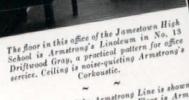
Teacher's rest room. Armstrong's No. 6291 Embossed Inlaid Linoleum and Armstrong's No. 735 Pine Linowall—a colorful, Linoleum and Comfortable. wall covering—make this room inviting and comfortable.



// Armstrong's Linoleum provides ideal floor for variety of rooms

In any large building—and especially in a school building—floors present not one problem but many. That's why Architects Beck and Tinkham, who designed the new high school at Jamestown, N. Y., came to Armstrong. They found—as architects the country over are finding—that there's a type of Armstrong Floors to exactly meet each aspect of the floor problem. And they found, too, that these attractive, resilient floors offer the additional advantages of long wear, easy installation, and low-cost maintenance.

For the domestic science room, as well as for the teachers' rest room, these architects chose gay patterns of Armstrong's Linoleum. This selection assured not only a warm friendly atmosphere, but also comfort underfoot. For the offices—where dignity of treatment and quiet were essential—Armstrong's Jaspé Linoleum Floors were installed.



Completeness of the Armstrong Line is shown in this domestic science room. Floor is Armstrong's No. 6252 Embossed Inlaid Linoleum with Armstrong's Core and Base. Walls are with Armstrong's No. 702 Trasertine Linowall.



ARMSTRONG'S Linoleum Floots

Jamestown High School

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see Sweet's Catalog, or write direct to Armstrong Cork Products Co., Building Materials Division, 1203 State St., Lancaster, Pa.



Quiet is assured in this reading room with a floor of Armstrong's Linotile No. 52 Light Gray and No. 54 Dark Gray. Ceiling is Linowall, with Armstrong's Metal Back Cove and Base.



Attractive entrance lobby of the Jamestown High School. Floor is heavy-duty, resilient Armstrong's Linotile in alternating light and dark brown tiles Nos. 62 and 64.

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What a remarkable tribute to Northern Hard Maple-and what a testimonial to the judgment of the architect who specified it!

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floor with Map

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New England produces nearly a third of the two billion pounds of fish consumed annually in this country. Advanced methods of freezing and handling retain delicious freshness—make 'shore dinners' possible a thousand miles inland. Trawlers use a ton of ice to a ton of fish. In port, fish are rushed to freezing room—a mighty busy place all season long. Recently, freezing-room floor of Atlantic Coast Fisheries' Provincetown, Mass., plant was replaced. Concrete has to stand up under hardest wear and exposure—resist constant wetting and drying, freezing and thawing. That meant first-class concrete—'good enough' wouldn't do.

By using 'Incor' 24-Hour Cement, work was completed in 48 hours, saving an 8-day plant tie-up. And concrete is stronger, denser, more watertight—because 'Incor' cures thoroughly in the short time concrete can be kept wet. Hence, speed no longer means sacrificing quality; instead, you get better concrete, in one-fifth the usual time, at substantially lower cost. Suggesting that contractors be encouraged to estimate exposed work under watertight-concrete specifications which take full advantage of 'Incor's greater curing efficiency. 'Incor'* 24-Hour Cement is made and sold by producers of Lone Star Cement, subsidiaries of International Cement Corporation, New York.

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- 'INCOR' 24-HOUR CEMENT

LETTERS

God's Temple

Forum:

. . . Let us refer to history. What does

God think of Housing?

If you look in the Bible and read the first Book of Kings you will learn that God gave instructions and specifications to build a Temple to the Glory of His Name, and Solomon did build the Temple. The Temple was prefabricated. Chapter 6, Verse 7, reads as follows: "And the house, when it was in building, was built of stone made ready before it was brought thither; so that there was neither hammer nor axe nor any tool of iron heard in the house, while it was in building."...

Saginaw, Mich. EDWIN O. KLEMM

American "Psyche"

Forum:

In Mr. Harold Sterner's letter to you published in your February, 1936, issue, he starts off with a few paragraphs about Le Corbusier's recent visit here in order to enter a plea that only Americans can understand "The American Dream" and therefore—since architects must understand the people they are building for—only American architects should design American buildings.

This looks much more like the "psyche" and philosophy of Hitler than the "psyche"

of the U.S.!

Then, again, in talking of the American "psyche," is Mr. Sterner thinking of that of New York City or of Hollywood, of Maine or of Georgia?

New York, N. Y. WILLIAM LESCAZE

Competition Intent

Forum:

Concerning competitions.

In the recent open competitions to which we have all been invited, the method of regulating the size of the problem seems to me to restrict design possibilities beyond its avowed intent.

Limiting designs by total cubage is on the surface simple, direct and effective. It has however the result of forcing the designer to a flat or nearly flat roof, with all the implications of that necessity. In our States that boast a blatant sun, this may be unimportant, but to many it denies the right to design as we see, to use what we find, and to learn to walk with little steps.

Inasmuch as comparative costs of flat and pitched roofs are sufficiently close to be considered equal for competition purposes, I suggest to whom it may concern a cubage figure carried 6 in. or what you will above the ceiling of the living space as it is now carried below the lowest finished floor. This would remove from competitive design an unnecessary and illogical handicap.

Washington, D. C. JOSEPH C. GRAY

Wide Open Spaces

Forum:

house building, which has been largely overlooked in the past... What I have in mind is that built-in furniture will save much more space than is generally believed. Some kitchen space has already been saved through the use of built-in equipment, but the possibilities of spacesaving in bedrooms and living rooms far exceed the possibilities in the kitchen. Furthermore, it should be possible to supply much of the furniture required in a house as a built-in feature for less actual dollars than are ordinarily paid for the detached furniture which is now used.

For example, living rooms require seating space, table space, shelf and cupboard space. If these requirements are met in a satisfactory way with the usual type of chairs, tables and cabinets, the floor space required for the furniture will far exceed the actual requirements of the furniture itself; but, if seats, shelves and cupboards are built-in around the walls of the room. and tables are of the folding type which may, or may not, be attached to the walls, a substantial decrease may be made in the dimensions of the room without affecting its usability. In the same way, built-in beds and dressers decrease the space requirements for sleeping rooms, and the space under the bed may be used for drawers to add to the storage space of the room. Built-in dressers run from floor to ceiling, with an open shelf space at a convenient height. In this way, maximum storage space is provided and minimum floor space is required. This method of saving floor space through the use of built-in furniture has long been used in railway and ship equipment.

If room dimensions can be reduced over the dimensions now considered necessary, the over-all dimensions of the complete house will also be reduced considerably. This decreases the quantity of material used, the lot space required for the structure, and the length of streets, pavements, sewer, gas and electric lines, and makes it possible economically to solve the heating problem through the gas or electric current.

One form of house which may be used for this purpose could be built in two factory-made units which could be towed to the lot with a motor truck. The dimensions of these units could be approximately 10 ft. wide and 25 ft. long . . . The lots would be equipped with the necessary concrete footings and with a small basement for housing heaters and the sewer, gas, water and electric outlets. The labor on the lot would then be limited to installing the heaters and making the necessary connections.

These prefabricated houses could be either sold or rented to the occupants, but the lot space for the houses would be rented from the owner . . . who would also be responsible for the maintenance of the community facilities. The operation of

these allotments would be similar in many respects to the operation of parking lots for automobiles. Unoccupied land held for future use could be used for these allotments. It is true that the investment in footings and underground services would have little, if any, salvage value. However, such investment would be small and could therefore be amortized in a comparatively short time. From the standpoint of the tenant, the furnishing of the houses would be complete, with the exception of linens and dishes, the equipment would be up to date in every respect, and the total investment should be low.

Cleveland, Ohio

T. W. FRECH

Carpenters First

Forum:

tell you that I've darned near worn out the pages, looking and lending to clients and to contractors. It is the best investment in education in residential architecture I've ever made and I can learn more from October and from December numbers than was possible in three years at M. I. T. and a summer at Fontainebleau.

For many years I have urged and fought and got headaches in an effort to get clients to invest in construction rather than in decoration and to get the average small builder, who receives most of the small residential work to do, to see the advantages in steel joists, casements, concrete floors. The trouble with the above mentioned builders is that they are almost always carpenters first and builders second. Could a little propaganda change this? Of course bigger and better builders are not often interested in residential work -not enough profit and too much fussing about closet space and colors by the dear V. D. VAN AKIN ladies . . .

Seven Mountains, Tryon, N. C.

Worth 5 Years

Forum:

I am a new subscriber. Your article, "Small Houses For Civilized Americans" in the January issue, so far as I'm concerned is worth the cost of the year's subscription—yes, it's worth the cost of five years'. I just hope the rest of the Washington real estators don't find out about it.

Personally, I'd love to see a series patterned after this outstanding contribution. Washington, D. C. Adlai Mann

Expanding Houses

Forum:

I have just read with considerable interest the letters in the January number of The Architectural Forum on the subject of small homes designed to fit the purse of the majority of the public . . .

. . . More attention should be given to the problem of a true "expansion type" house. I am sure no one wants to see duplicated those unfortunate situations wherein

(Continued on page 128)

An Achievement in Architecture



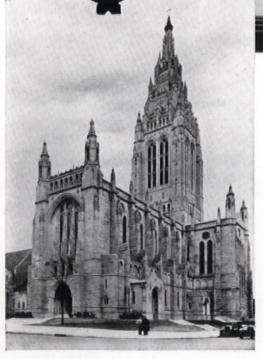
East Liberty Presbyterian Church Pittsburgh, Pa.

Cram & Ferguson, Boston, Mass. Architects

James L. Stuart Co., Pittsburgh, Pa. General Contractors

Dougherty & Jennings, Pittsburgh, Pa. Plastering Contractors





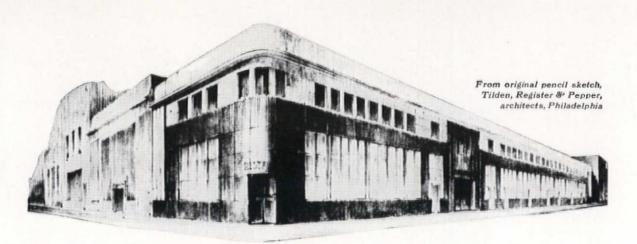


None realize more than the Architect that beauty of form, to be permanently preserved, must be wedded to hidden structural strength. So it is that Steelcrete Metal Lath and plastering accessories are specified and used for the plastered walls and ceilings of such architectural achievements as the East Liberty Presbyterian Church in Pittsburgh, Pa. The Steelcrete Line meets every plastering requirement for perfect finish, permanent protection against cracking and for rapid, economical installation. May we send you descriptive literature?

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ANOTHER DISTINCTIVE FACADE OF VIRGINIA BLACK SERPENTINE



It seems as though black has become synonomous with distinction in modern design. The contrast with any light colored material is excellent, and where the black surface can be sand-blasted it adds additional interest.

While a comparatively new material as far as natural quarried stone is concerned, Virginia Black Serpentine is a blood-brother of Alberene Soapstone, whose reputation for weather-resistance, charm of texture and

adaptability goes back several hundred years.

Tilden, Register & Pepper selected Black Serpentine for the building shown at 15th and Walnut Streets because it met their requirements from the standpoint of color and design. While this was their primary interest, the study of suitable materials developed the fact that Black Serpentine offered important economical advantages as well.

Its polish is natural and is produced in the same manner as that on any marble or granite. Experience has shown that it will stand up substantially longer

> than any marble commercially used. It is also becoming increasingly popular for such interior uses as base, door trim, pilasters, mantel-facings, etc. Your inquiry will receive prompt careful attention.

The soapstone steps of the McPherson Mansion at Fairmont Park, Philadelphia, date from 1700.

Other typical exterior installations of Virginia Black Serpentine: U. S. Post Office, Cambridge, Mass.; Rundell Memorial Library, Rochester, N. Y.; U. S. Parcel Post Building, Richmond, Va.; Miltenberger Memorial Home, New Orleans, La.; Continental Building, Dallas, Texas.

Virginia Black serpentine

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This sheet is well adapted for use in lighting fixtures and has been applied as panels in bars and counters, where with lights behind, it provides a luminous effect of a striking character.

The material may be had in plain white or in white with an opaque surface in any Formica color. The opaque surface may be sand-blasted away — making possible any type of design that can be produced by sand-blasting.

It may also be had in translucent colors: Red, orange, blue, green, etc. The opaque surface may also be put on a sheet that transmits colored light. Such a sheet after sand-blasting would show the design as white in reflected light, and as colored in transmitted light.

When you need a non-breakable translucent sheet remember Formica!

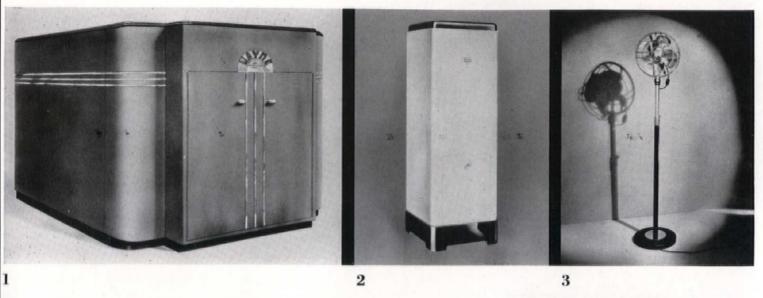
We shall be glad to send samples

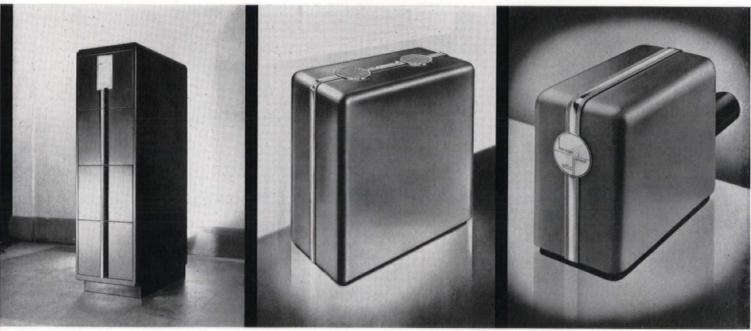
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4620 SPRING GROVE AVENUE . . CINCINNATI OHIO



FOR BUILDING PURPOSES

PRODUCTS AND PRACTICE





The first period of machine production showed clearly a desire to follow as closely as possible the lines of those objects which came from the skillful hand of the craftsman. Wood ornaments were readily imitated in cast-iron. The iron stove had the same legs and the same carvings as the Baroque chair. The gas chandelier took over the form of the oil lamp and up to the present day the electric bulb and fixture still frequently take their basic form from the candlestick. However, consciousness and appreciation of the utility and efficiency of the modern machine have resulted in a cleansing of the more irrelevant details in industrial design. Form as adapted to use and designated to indicate the real nature of the article replaces the individualized looks of an earlier product.

5

The greatest changes in the building product design have taken place in the fields of heating and refrigeration. The public has eagerly accepted the new shapes of heating and air conditioning plants and refrigerators. The word "streamline" is now an idiom. Ice boxes, ranges and even ashtrays had to have rounded corners. Here apparently it stopped. Many

attempts have been made to educate the public to a "designed for living" home but it will take years until the majority of houses will be fitted to well-designed objects such as illustrated above.

6

1. Furnace, oil burner, fans, humidifiers and filters are enclosed in a gray enameled, chromium trimmed jacket designed by Lawrence Blazey. The unit is manufactured by Wayne Oil Burner Corporation. 2. The automatic Gas Water Heater has all controls completely enclosed yet accessible through the removable front panel. This heater, manufactured by Crane Co., is equipped with a copper tank and with the geyser principle of heating. 3. An electric fan designed by Robert Heller for the A. C. Gilbert Company. The oscillating fan is fastened to an adjustable base of chromium set in a black enamel standard. 4. Wilbur Henry Adams designed a filing cabinet for the Berger Manufacturing Co. A receding base to allow for toe room, continuous tubular handles for easy drawer opening, and the four index cards placed on the top drawer are the new features of this cabinet. 5. A self-contained summer air conditioner that cools, circulates and de-humidifies the air, manufactured by the Herman Nelson Corp. 6. The intricate machinery of a conversion oil burner of the gun and pressure type is enclosed in a smooth chromium trimmed jacket; also a product of the Herman Nelson Corp.

PRODUCTS AND PRACTICE Continued on Page 102.



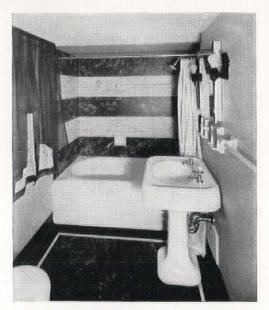
Architect: W. G. Lanphear & Son

SEALEX LINOLEUM BIG FEATURE OF NEW LOW COST DEVELOPMENT

"In our low cost home development we are using Sealex Wall-Covering and Adhesive Sealex Linoleum because of their economy, practicability, and beauty."

-C. & M. Construction Corp., Williamsville, N. Y.





Getting individual beauty into homes selling under \$5,000 was the problem facing the C. & M. Construction Corp. And in Sealex Floors and Walls, they found the complete solution. Note these appealing, modern rooms that feature Adhesive Sealex Floors and Sealex Wall-Covering to ceiling height. Note, too, the sanitary cove base where floor meets wall.

In the sensational new Adhesive Sealex Linoleum, architects and builders all over the country are finding the ideal way to provide the finest of linoleum floors at a substantial saving in cost!

For this inlaid linoleum comes with adhesive already on the back—applied at the factory. No extra paste is needed. No felt lining. Laying time is reduced materially.

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Adhesive Sealex Linoleum comes in a wide range of colorful, style-right patterns—designs suitable for any room in the house. Its beauty—its durability—and its absolutely smooth, sanitary, easy-to-clean surface all have great sales appeal for prospective home owners.

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ADHESIVE SEALEX LINOLEUM

and SEALEX Wall-Covering

your feet will know!



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AZROCK is sanitary, fire resistant, easily cleaned; and surprisingly economical in both first cost and permanent maintenance.



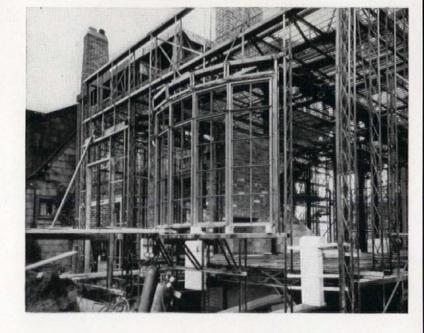
UVALDE ROCK ASPHALT CO., San Antonio, Texas

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For most people the building of a home represents the most important purchase of a lifetime. Granted that your client thinks first of the home you design for him as an agreeable place to live in, he is also vitally interested in it from the investment standpoint.

A home with Bethlehem Open-Web Steel Joists in its floor construction, and Bethlehem Steel Studs for exterior walls and interior bearing walls, is an investment in which the owner can put his savings without fear of rapid obsolescence or excessive cost of upkeep. With its framework of strong, dependable steel, such a house will remain for generations as good and as serviceable, in all essentials, as on the day it was completed.

A home built in this way is of course fire-safe. Its rigid steel framework remains forever free from the shrinking and warping that so often cause disfiguring cracks, and throw doors out of alignment. It is safe against termite attack, is vermin-proof, and the walls are practically soundproof. Air-conditioning can be readily installed at a minimum of expense, even after the house is completed.

In spite of the values that Bethlehem Open-Web Steel Joists and Studs contribute they add very little to the cost of a home. These steel members, developed and manufactured by Bethlehem Steel Company, provide a thoroughly practical, simple and economical way to construct a steel frame. Architects and building contractors who have used them in home construction are enthusiastic about their possibilities.

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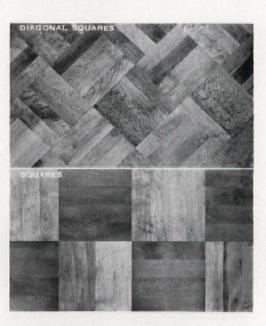
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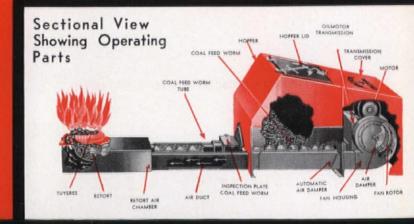
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That was used in the house
that Jack built.



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That ate the lumber
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that Jack built.



This is the treatment that starves the termite That ate the lumber That was used in the house that Jack built.



This is the decay
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That ate the lumber
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WOLMANIZED LUMBER gives you complete protection against . . . Decay and Termites. It can be painted, varnished, stained and used like any other wood. Let us send you complete information about WOLMANIZED LUMBER, the building material that endures.

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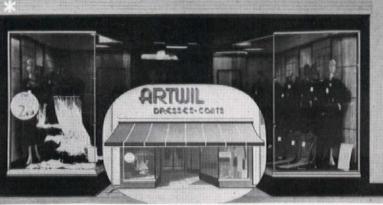
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ARTUIL DRESSES-COATS





TODAY'S STORES AND SHOPS

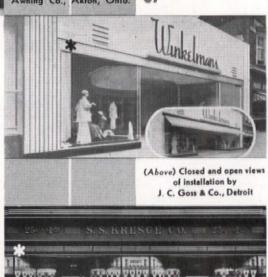
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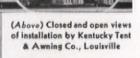
SINCE nothing so mars the striking effect of the new beautiful modern fronts as unsightly exposed rolled awnings, it became the job of Fanner engineers (specialists in awning devices for over a decade) to lick this particular problem. And the answer, already acclaimed by architects, building owners and contractors throughout the country, is the New Improved Lid Lifting & Closing Device.

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C. It is, in reality, the finishing touch! And its cost trivial in comparison to the added beauty and protection it brings.





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FORUM OF EVENTS

ARCHITECTURAL LEAGUE'S GOLDEN JUBILEE



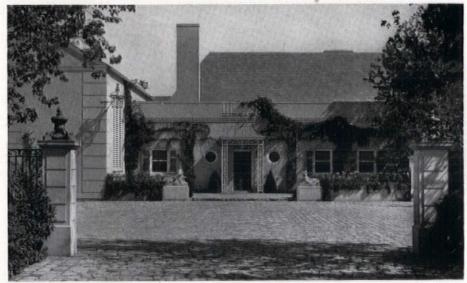
ROOM OF 1886 Re-created by Bruce Butterfield



ROOM OF 1936 Frank Ro Designed by The American Institute of Decorators



THE YOUNG by Waylande Gregory Henry O. Avery Sculpture Award



INDOOR TENNIS COURT BUILDING by James W. O'Connor Silver medal in Domestic Architecture

Gottscho



Detail of "MODERN WESTERN CIVILIZATION" Mural by James Michael Newell Gold Medal Award in Decorative Painting

HALF A CENTURY OF PROGRESS

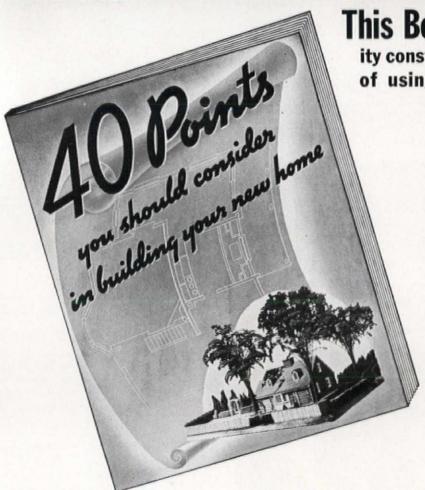
FIFTY years ago, in the old Salmagundi Club on 23rd Street, was held the first exhibition of architectural drawings in New York City. Immediate outgrowth of that show, which included the best contemporary names of that day, was the present powerful Architectural League whose annual show is now the most important in the U.S. architectural world, whose medals and awards are the most eagerly awaited prizes in the profession.

Last month, the League enjoyed its golden anniversary. In their most ambitious offering since 1929, the League collected over 900 exhibits, and displayed them (at \$5 each) in the Fine Arts Gallery on 57th Street; dedicated them to the progress made by the profession since

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People must be able to see the greater values they can have in a home today before they will buy. Johns-Manville helps you show them.



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This Book creates a desire for quality construction and stresses the need of using an architect to assure it

> A MAJOR function of this valuable book lies in pointing out to those planning to build homes the necessity of using an architect to secure a well-built, well-planned house.

> It is packed with ideas and photographs that show how Johns-Manville quality Building Materials increase the values available in 1936 houses. It discusses the subject of sound construction and describes the Johns-Manville principle of "Triple Insulation" . . . which assures a permanent, fire-safe and virtually maintenance-free structure at low cost. It even tells how to go about financing.

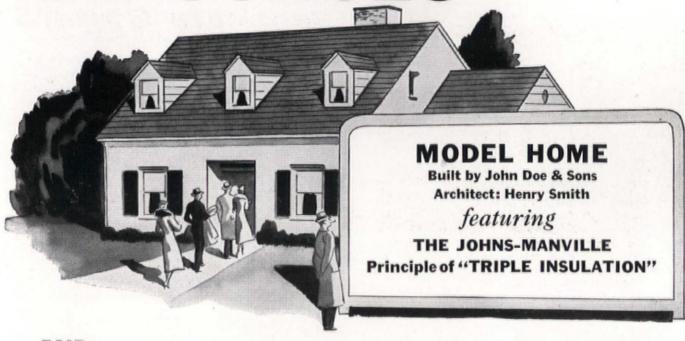
> Featured in J-M national advertising, this book will help stimulate the demand for architectural services in the construction of quality homes under the supervision of competent architects. Send for a sample of the "40 Points Book" today, so that you may familiarize yourself with this whole program. Use the coupon.

Don't miss the J-M 1936 Talking Picture

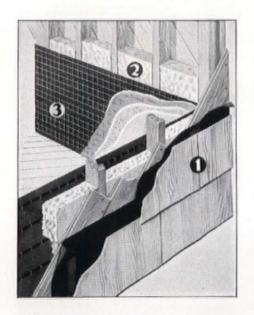
See this dramatic presentation of our complete plan to boost quality construction. It explains how Johns-Manville, through its dealers, cooperates with builders and architects to show the public the great values they can secure today in a moderately priced home. Ask the J-M dealer in your town when he can arrange a showing for you and your clients, or write to Johns-Manville direct.

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ANNOUNCES



AND a successful plan to demonstrate in your community a quality home built in conjunction with a local architect



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- Rock Wool Home Insulation . . . a fireproof, rotproof and non-corrodible material.
- 3. No expensive maintenance bills for cracked plaster because the walls and ceilings of this house are built with J-M Steeltex . . . a patented construction providing added strength and fire resistance.

Johns-Manville BUILDING MATERIALS

JOHNS-MANVILLE, 22 East 40th Street, New York Please send me a sample copy of the "40 Points Book," and details of J-M's "Triple Insulated" House program at once. Let me know when and where I can see the new J-M movie.

Name	Title
Organization	
Address	
City	State
	AF-4-36

APRIL - 1936

Modern Buildings

DEMAND THE CONVENIENCE AND ECONOMY OF

Doors that open Upward

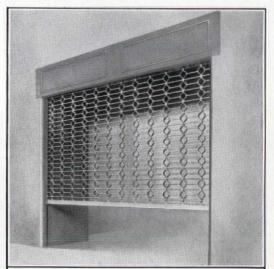
With space economy and permanent efficiency so vital to modern building design, doors must do more than merely close an opening. And Kinnear Doors do! Opening upward they operate with convenience, case and speed the year around. They require no valuable space. They're out of the way. Snow, ice and other ground obstructions do not affect them. Whether for residence, garage or commercial or industrial buildings there's a style Kinnear Rolling Door to architecturally suit. And, Today, your clients expect the convenience

your clients expect the convenient these doors afford.

door troubles . . . and built in wood or steel it's ideal for many other uses. Combined with its sectional design are many special Kinnear features that make it remarkably durable. Operated either manually or electrically, it adds tremendously to the convenience and appearance of the modern residence. Specify it and allow no alternates, for the door is the most important part of the garage.



Below: The Shreveport, Louisiana Incinerator . . another case where Kinnear Steel Rolling Doors were chosen because they assure long and dependable service with generous savings in operating and maintenance costs. Note how they harmonize with the modern architectural design.





Rolling Grille

A new type of protection! Remarkable strength combined with window shade convenience...space saving, easy operating and economical to permanently install. Unnoticed when open—but when closed an impassable barrier that affords the advantages of air, light and vision. Architecturally attractive and built in any size or metal the Rolling Grille is ideal for any modern building.



Steel Rolling Doors

Here's the door for which Kinnear is famous. 40 years of service records have proved its efficiency and durability . . . that it costs less to operate and maintain than any other type door. Just like a window shade, coiling above the opening and accurately spring counterbalanced, it is individually built in any size and easily installed on old or new buildings. The interlocking steel slat curtain will not set or shatter, but in case of accidental damage, one or more slats can be economically replaced. It's the door that will protect your clients' investment.



THE KINNEAR MFG. CO.

1640-60 Fields Avenue

Please send us your catalog, giving details of the full line of Kinnear Upward-acting Doors and Door Operating Equipment.

Name _____

Address

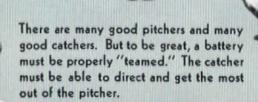
Address

City ___

State

A Perfect Battery ROUND "R" BOILER

and Good Automatic **Firing Equipment**



 Modern heating requires just as much team work as baseball. The ability of a boiler to cooperate with and get the best out of a burner or stoker must be given first consideration. Regardless of the ability of the burner or stoker to make heat economically the installation can't be satisfactory unless the boiler is able to "take it" and use that heat efficiently.

The result of 68 years of building steel heating boilers, the Kewanee Round "R" is a perfect teammate for automatic firing equipment . . . with features of design and construction which add extra years of life and guarantee a worth-while fuel saving during every one of them. Note these features listed at the left. They can serve as a standard by which any boiler designed for automatic firing should be judged.

> Get the facts about the Kewanee Round "R" .. what it can do . . its low cost . . easy official financing plan and quick delivery from warehouse stocks.

KEWANEE BOILER CORPORATION

KEWANEE, ILLINOIS

Eastern District Office, 37 West 39th St., New York City Branches in 61 Principal Cities division American Radiator and Standard Sanitary Corporation



LARGE STEAM SPACE Insures suffiure changes caused by the hittent operation of automatic STURDY INSULATED DOORS keep heat inside instead of out and wasting fuel.

HEAVIER CASTINGS, add extra PIREBOXES EXTRA BIG AND HIGH have ample space for complete

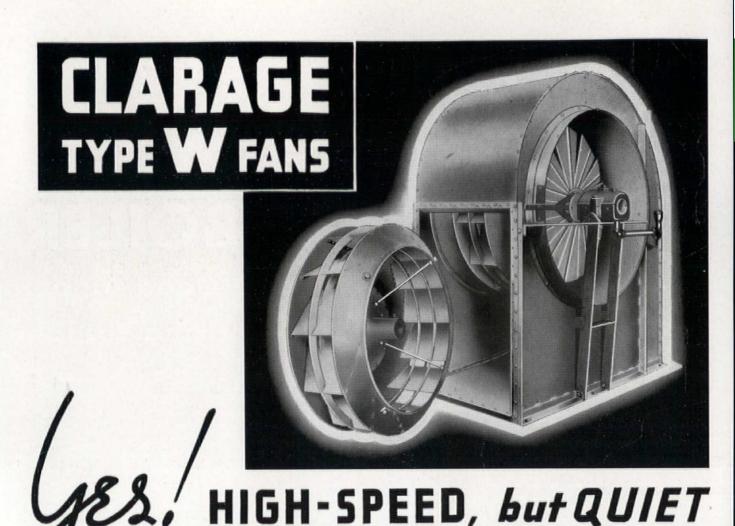
combustion
TWO-PASS TUBES Provide DOUBLE
TWO-PASS TUBES, provide DOUBLE
TRAVEL for the gases, holding them
in the boiler longer, to use ALL
the available heat

(accessibly litted inside the boiler) a part of the boiler, not an extra produces a plentitul domestic supply. KEWANEE SPINNER BLADES force the

IN ROUND, SQUARE OR REGAL JACKETS So the burner may be completely accessible.

reserve of dry steam

KEWANEE COPPER HOT WATER COIL



NEW AND MORE EFFICIENT DESIGN..PLUS A SELF-LIMITING HORSEPOWER CHARACTERISTIC

From the standpoint of economy Clarage Type W Fans are the *perfect* equipment for modern air conditioning and ventilating services.

First, because of higher operating speeds, Type W Fans can be driven by higher speed motors.

Second, because of exceptionally high efficiencies plus a full self-limiting horsepower characteristic, in a great many cases these fans can be driven by motors one size smaller than customary practice.

Thus, on practically every job, substantial savings in motor

first cost are not only possible but very probable—and operating economies al-ways the rule.

Another point: despite higher operating speeds, Type W Fans are extremely quiet. In fact, on this score they satisfy the most exacting requirements.

The Large Type W Fan shown above is equipped with Clarage Vortex Control (in inlet).

This patented device permits full-range capacity regulation without using an expensive variable speed motor. All sizes of fans can be furnished with Vortex Control if desired.

WRITE FOR BULLETIN 112

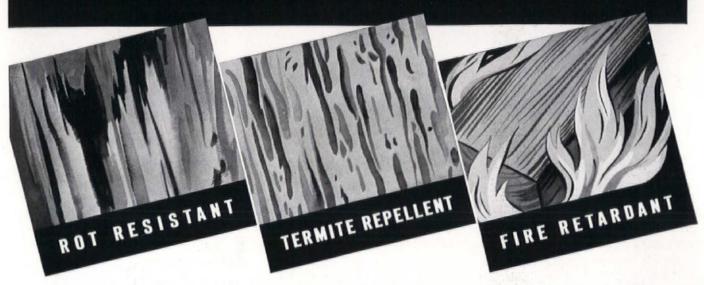
covering this latest Clarage development. Once acquainted with this new fan equipment, we believe you will wish to specify it consistently due to its definite advantages.



- Complete Air Conditioning
- Ventilation
- Heating
- . Cooling

CLARAGE FAN COMENY - KALAMAZOO MICH.
Sales Engineering Offices In All Principal Cities

Lumber treated with BRASSELLI CHROMATED ZINC CHLORIDE



Homes and commercial buildings designed for long service, attractive appearance and freedom from repair should be built with GRASSELLI CHROMATED ZINC CHLORIDE treated lumber. By using treated lumber for sills, joists, sub-floors, sash, outside steps and porch materials you are guaranteeing the life of the property for the term of the investment.

CHROMATED ZINC CHLORIDE is an improved form of the long established zinc chloride treatment, the recognized standard "salt" treating reagent of The American Wood Preservers' Association. It is essentially an "antiseptic," possessing properties obnoxious to termites and toxic to rot producing fungi.

Lumber impregnated with GRASSELLI CHRO-MATED ZINC CHLORIDE retains its full strength indefinitely, is immune to early destruction from natural causes and capable of long time service under the most severe conditions. It leaves the lumber clean, odorless, fire retardant and paintable. No item of cost entering into the building of a home or commercial building is more justly warranted. It is estimated that an added cost of but 2% will protect all vulnerable parts of a new home against premature decay and termite attack.

We shall be glad to send any additional information you need.

THE GRASSELLI CHEMICAL COMPANY, Inc. Founded 1839 New York and Export Office: 350 Fifth Ave. Cleveland, Ohio RASSELLI CHEMICAL COMPANY, Inc. Founded 1839 New York and Export Office: 350 Fifth Ave. Cleveland, Ohio San Francisco, Sat Mission St. Los Angeles, 2260 E. 15th St. Represented in Canada by CANADIAN INDUSTRIES, LTD., General Chemicals Division, Montreal and Toronto In SWEET'S SWEET'S

Low-cost houses need Permanent Materials

+

In the past, houses which had vital parts, such as piping, gutters and flashings made of rustable metals were taken as a matter of course. Then, buyers of expensive houses discovered the advantages of permanent copper, brass and bronze installations.

Today, the big market is the low-cost house. But to get low-cost should not mean scrimping on materials, for the buyers of these houses can least afford the always unexpected cost of replacement repairs. Building experts have found that for less than 3 per cent extra, copper, brass and bronze can be used instead of rustable metals. An amount so small that its effect upon the total cost of the house is negligible. In fact, the savings in repair and replacement costs, over just a few years, more than make up the difference.

In the specifications for houses planned by you, may we suggest that you say "Revere", the oldest name in copper.

COPPER TUBE LASTS A LIFETIME

For piping, choose Revere Copper Water Tube, joined with trim and leak-proof Streamline soldered Fittings, or compres-



A Streamline soldered Fitting

sion fittings. This tube can be specified for underground water service, hot and cold water lines, fuel oil lines, and heating lines. It is available in three types...

K, L and M... to meet the corrosive conditions and price considerations of the particular in-

stallation. It comes in two tempers: Hard, for new and exposed work . . . Soft, for concealed replacement work and those places

where flexibility is desired. Revere Copper Tube is 99.9% pure copper . . . and 100% useful metal, because no threading is required. Saving in weight means a saving in cost of material. Copper Water Tube installations are competitive in price with those of rustable metals.



Revere Copper Tube for oil burner installation

Or, you may prefer Revere Brass Pipe and Red-Brass Pipe...the old standbys for a long-lasting installation.

USES FOR COPPER SHEETS

Revere copper sheets have been popular for roofing since the time of Paul Revere, first roller of copper in America. In the early 1800's, Revere Copper was used on the Old North Church, and the State House in Boston, the City Hall in New York, the Capitol in Washington, and many other public buildings. And



Permanent roofing

today, Revere continues to be the leader in the sheet copper industry...with the two largest copper rolling mills in the U. S., and the only continuous sheet copper rolling mill.

For low-cost houses you will find Revere Sheet Copper permanent, workable and economical. It is *the* weather-

Revere



Leak-proof flashing

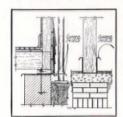
tested and time-proven material for roofings, flashings, gutters, downspouts, valleys, and other sheet metal applications.

Also remember Revere Leadtex (leadcoated sheet copper). Leadtex has all the advantages of sheet copper...light weight, workability, economy. In addition, it has the mellow color, the weath-

ering and non-staining qualities of lead.

TERMITE PROTECTION

The best cure for termites is prevention. The time to take care of them is when a house is erected. Shields of non-rusting Revere Sheet Copper between the foundation walls and the superimposed woodwork of houses (see illustration) assure effective termite protection for the life of the building.



Shields against termites

RUST-PROOF HOT WATER TANKS



Revere Copper tank for hot water storage

For hot water storage tanks, leading tank manufacturers are using and recommending Herculoy*, Revere's patented highstrength silicon-bronze alloy. Consider Herculoy's advantages: strength of steel; corrosion resistance similar to that of pure copper; easily drawn and formed; fabricated by any of the standard welding processes; and meets Federal Specifications WW-P-541-9 for copper-silicon tanks. The net result: Herculoy tanks are de-

pendable, durable, and last indefinitely. Revere Sheet Copper is also recommended for long-lasting rust-proof hot water tanks. A copper or copper alloy tank should always be used with copper and brass piping.

*U. S. Patent Nos. 1,868,679 and 2,002,460

OTHER USES FOR COPPER

Copper and its alloys are such versatile metals that it is no surprise to find them used in many new and interesting ways in modern homes. For example, Revere Copper Water Tube is now being effectively used in forced-circulation hot water heating systems. Such a system is very economical in operation, and just about as inexpensive to install as a similar system made with rustable piping.

To install copper, brass and bronze in vital parts of the building, where deterioration soon means heavy additional expense, will add to your building dollar:

For Copper Flashings, Downspouts and

For Copper Water Tube or Brass Pipe

For less than 3 per cent extra you can use brass, bronze and copper and insure your house against costly repairs.

Copper and Brass Research Association

If you would like the latest information on copper, brass and bronze for architectural uses, write for details and specifications on any Revere products. Address our Executive Offices.

A PRE-ANNOUNCEMENT ABOUT THE REVECON SYSTEM*

Today's architectural trend toward the use of flat sheet materials has necessitated the development of new elements with which these new material forms may be applied over any type of superstructure. The Revecon System, shortly to be released, accomplishes this by utilizing extruded structural metal shapes which can hold any rigid flat sheet material (up to 9/16" thick), glass or formed-edge metal panels. The shapes are made of a strong rust-proof alloy. The system operates with equal effectiveness on interiors or exteriors.

Component shapes interlock with uniform precision, so a Revecon assembly becomes far more than a mere wall covering ... it functions as a structure! Panel materials are not distorted through unequal stresses.

The third ingredient of the System is Revecon metallic mastic which, remaining permanently elastic (except for a tough protective skin), serves the dual purpose of making the job weather-proof and of providing for expansion and contraction within each panel area. The powerful adhesion of this mastic has been conclusively demonstrated in service.

A valuable handbook describing the Revecon System is being prepared and will be sent on request when completed.

*U. S. Patents 1,973,795; 2,005,994 and 2,012,070

Copper and Brass Incorporated

Founded by Paul Revere 1801

EXECUTIVE OFFICES: 230 PARK AVENUE, NEW YORK CITY . MILLS: BALTIMORE, MD. . TAUNTON, MASS. NEW BEDFORD, MASS. . ROME, N. Y. . DETROIT, MICH. . CHICAGO, ILL. . SALES OFFICES IN PRINCIPAL CITIES









NEW ENGLAND

CONTINENTAL

SOUTHWEST

BEACH - RESORTS

CORKANSTELE

A fully patented method of Building Construction

270 Madison Avenue New York City, N. Y. U. S. A.

PROOF AGAINST:-

Fire

Termite

Vermin

Sound

Dust

Lightning

Hurricane

Earthquake



WARM IN WINTER
IDEAL FOR AIR
CONDITIONING

CORKANSTELE comprises Structural Steel frame, erected under standards of A. I. S. C., embedded against moisture in walls of solid pure cork—all walls, partitions, floors and roof ready for conventional finishes.

CORKANSTELE has no architectural limitations, is adaptable to any building plan, employs all local building trades and materials.

CORKANSTELE is available in all building centers, either through established franchise offices or our New York offices.

FAST ERECTION, ease of handling, controlled production schedules make economic savings for builders—no waste materials or labor.

HOME BUYERS want better homes, prevalent long term mortgages demand better houses, lending institutions will continue raising their minimum building standards towards CORKANSTELE standards.

STEEL and **CORK** construction, known over 40 years—from the smallest kitchen ice box to the largest storage plant—means permanent and unshrinkable building. DIFFERENCE IN COST, if any, REPAID SEVERAL TIMES OVER BY SAVINGS IN FUEL, UPKEEP and MAINTENENCE.

INFORMATION

Send for complete literature that is written for Engineers or housewives.

Forward your house plans for estimated cost.

Franchises being written in all States. Send for merchandising plan and explain your facilities for handling.

Permanent and Construction finance service may be arranged in many localities for CORKAN-STELE representatives.

CORKANSTELE THEATERS, BUILT ANYWHERE, COST LESS, ERECT FAST, HAVE PERFECT ACOUSTICS

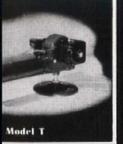
SUBURBAN THEATER

METROPOLITAN

GULF STATES

INDUSTRIAL





BEYOND COMPETITION:

Announcing the

SUPER * SAFE



Model J

asterl



Model S

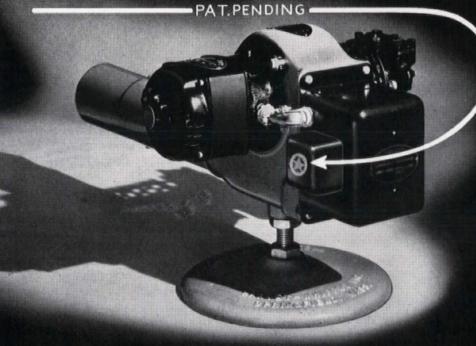




Iron Oil Furnace



LINE OF OIL HEATING EQUIPMENT featuring the



Harvey-Whipple, Incorporated, presents its 1936 line of oil heating equipment to the dealers and home-owners of America with the conviction that the outstanding feature, the Master Kraft Borkontrol, is one of the most significant contributions to the science of oil heating since its inception. Dealers are invited to write for details.

SPRINGFIELD, MASS. HARVEY-WHIPPLE, Inc.



Model M



Air Conditioner



Fuel Saver

ND FOR THE STORY OF THE "SUPER*SAFE" OIL BURNER

RCHITECTS!

INTRACTORS!

EALTY MEN!

OME OWNERS!

All who have any interest in automatic home heating and air conditioning, should write for the facts on the MASTER KRAFT line; particularly on those exclusive features which will carry assurance to wavering prospects for automatic heat.

HARVEY-WHIPPLE, INC.

562 Emery St., Springfield, Mass.

Please send me complete details regarding the Super-Safe MASTER KRAFT line of heating and air conditioning equipment, and the facts about the BORKONTROL.

-	. 7			
	N	53	TIL	P
-	.,	**	***	

Address -

City_ Business_

OWENS-ILLINOIS' CONTRIBUTION

Mass Masonry

INSULUX GLASS MASONRY



ADDS GREATLY

TO THE COMFORT AND BEAUTY OF THE MODERN

HOME.



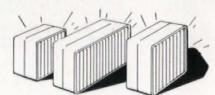
IT OFFERS THREE OUTSTAND-

ING ADVANTAGES — TRANSMISSION OF DIFFUSED

LIGHT - EXCEPTIONAL INSULATION VALUE - AN

OPPORTUNITY FOR UNLIMITED ARCHITECTURAL

DESIGN . . . THERE ARE THREE CONVENIENT SIZES.



ALL ARE LAID UP BY MASONS USING

STANDARD MORTARS. INSULUX WALLS ARE

IDEAL TO ADMIT LIGHT INTO THE HOME



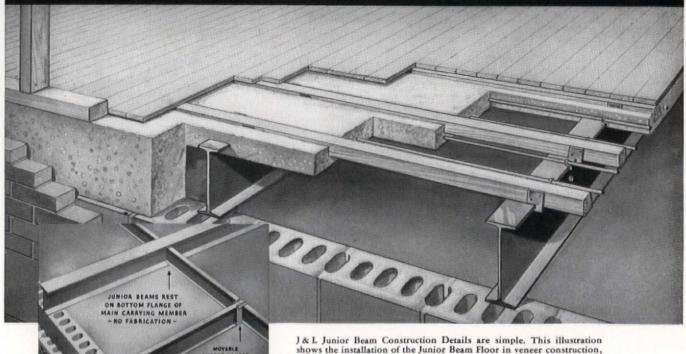
TO THE MODERN HOME

Hir Filters

AND YET OBSCURE THE VIEW—AS WALLS FOR KITCHENS, BATHROOOMS AND SUNROOMS-AS ABOVE-GRADE BASEMENT WALLS. ANOTHER OWENS-ILLINOIS BUILDING MATERIAL THAT CONTRIBUTES TO THE COMFORT OF MODERN LIVING IS DUST-STOP FIBERGLAS AIR FILTER. THE DUST-STOP AIR FILTER REMOVES 96-98% OF ALL AND OTHER FOREIGN MATTER DUST, DIRT, AND MAKES ANY HEATING SYSTEM CLEANER. OWENS-ILLINOIS GLASS COMPANY, TOLEDO, OHIO.

APRIL - 1936

MODERN SHRINK-PROOF, TERMITE-PROOF FLOORS WITH J&L JUNIOR BEAMS AND THEY COST NO MORE



INSTALLATION WITHOUT TECHNICAL RESTRICTIONS

The J & L Steel and Concrete Floor System offers the advantages of steel construction in the first floor of any residence or light occupancy building without imposing any restriction on either architect or builder. No specialized experience or special equipment is necessary. This system is also applicable to upper floors when solid masonry walls or steel framing are used.

OTHER J&L STEEL PRODUCTS **USED IN CONSTRUCTION**

The many J & L Steel products used in the construction industry are widely known for their uniform and dependable high quality, and they have been specified by architects for many years. They include J&L Light Weight Channels for stairway construction, Steel Pipe, Bars for Concrete Reinforcement, Assembled Road Bar Mats, Standard Structural Shapes, Steel Piling, and Fabricated Structural Work.

shows the installation of the Junior Beam Floor in veneer construction, such as is used in many low cost houses.

The J & L Junior Beam Floor System for residences and other light occupancy buildings offers practical advantages which architects everywhere have been quick to recognize.

J & L Junior Beam Floors are modern, simple in design, and easy to install. They are completely and permanently termiteproof, and fire-resistant. They cost no more than less satisfactory types of floors because their structural advantages effect economies within the first year that more than offset the slightly higher cost of materials. J & L Junior Beam Floors are rigid, shrinkproof and vibration-free. This means no plaster cracks, no twisted door frames, no parting of floors, no gaps beneath baseboards no other undesirable and costly conditions resulting from outmoded methods of floor construction.

For complete and detailed information on J & L Junior Beam Floors see Sweet's 1936 Architectural Catalog, Section 5, Catalog 6, pages 1 to 16 inclusive. Investigate the many advantages of 1 & L Junior Beam floor construction—then specify them on your next job.

JONES & LAUGHLIN STEEL CORPORATION

AMERICAN IRON AND STEEL WORKS

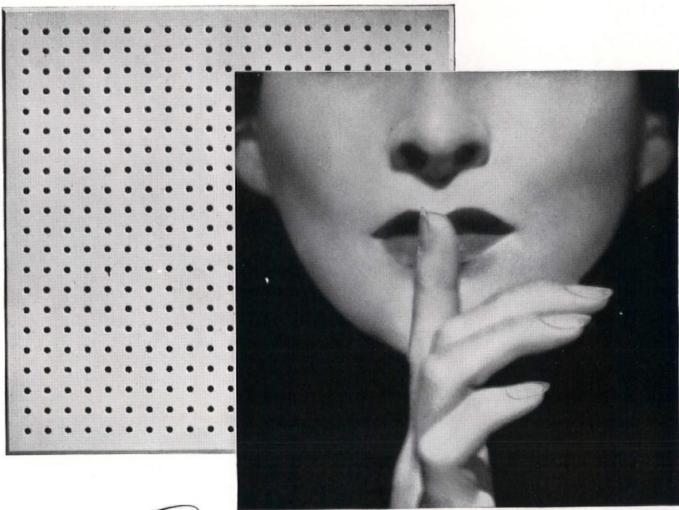
JONES & LAUGHLIN BUILDING, PITTS BURGH, PENNSYLVANIA

Sales Offices: Atlanta Boston Buffalo Chicago Cincinnati Cleveland Dallas Denver Detroit Eris Houston Los Angeles

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Warthouses: CHICAGO CINCINNATI DETROIT MEMPHIS NEW ORLEANS NEW YORK (Long Island City)* PITTSBURGH

*Operated by National Bridge Works Division of Jones & Laughlin Steel Service, Inc. Canadian Representatives: JONES & LAUGHLIN STEEL PRODUCTS COMPANY, Pittsburgh, Pa., U. S. A., and Toronto, Ont., Canada



SAYS "Hush" TO NOISE Ound Condition with ACOUSTI-CELOTEX with ACOUSTI-CELOTEX

FOR quieting noise, controlling sound, clarifying speech, and in every phase of sound conditioning, Acousti-Celotex has demonstrated its outstanding capabilities for over 10 years.

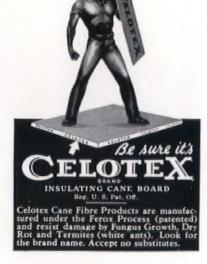
In hospitals, schools, business offices, and workshops, Acousti-Celotex protects against din and distracting turmoil from without and quiets noise within. The problem of retarding the spread of noise from building machinery, elevators, kitchens, has also been most satisfactorily solved by Acousti-Celotex. In radio studios, auditoriums, churches, and

in places of public entertainment and education, its use with or without sound amplification assures better hearing by preventing echoing reverberations.

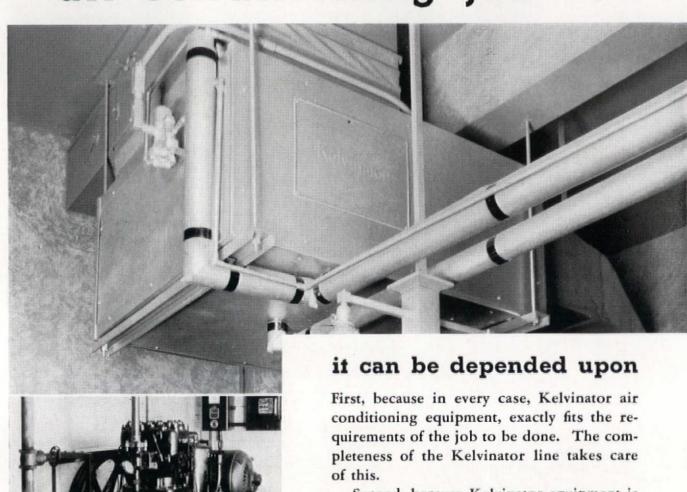
In all applications for sound conditioning, Acousti-Celotex is easily—economically installed. It may be applied to any type of ceiling surface either in new or existing buildings. It is permanent and may be painted or decorated repeatedly without destroying its acoustical properties. Architects are invited to consult the nearest Acousti-Celotex distributor who will cooperate in helping solve any sound conditioning problem. Or write

THE CELOTEX CORPORATION, 919 N. Michigan Ave., Chicago, Ill.





If it's a KELVINATOR air conditioning job . . .



Above are two photographs of the Kelvinator equipment used in cooling the large chapel and reception room in the undertaking establishment of Mr. F. T. Norris, Second, because Kelvinator equipment is absolutely dependable, from the standpoint of construction and also in regard to efficient, economical and trouble-free operation.

Complete information—or dependable surveys on particular jobs—remodeling or new construction—may be secured without cost through your nearest Kelvinator dealer or by writing direct to Kelvinator Corporation, 14250 Plymouth Road, Detroit, Michigan. Factories also in London, Ontario, and London, England.

Lelvinator
AIR CONDITIONING FOR PROFIT

"How I became President of the company— —Yet I'm only 59"



A Success Confession
wrung from Rensselaer Morgan*

**FOR years I suffered that dread affliction that only four out of five men can understand. That scourge, Scratchitus (gritty pencils). I tried everything—all kinds of pencils, but I couldn't seem to find a smooth flowing one.

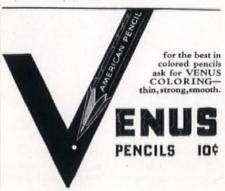
"Although I had an expensive desk set, my writing was terrible, my best friends told me. Grit got my goat. I always felt apologetic.

"Then I discovered Venus Pencils and now I have a charge account at the Ritz and a man tried to sell me his yacht,

"To end self-consciousness and be a Napoleon in Business, the first requirement is a superior pencil, one that can't scratch, one with strong points.

"Since I began to use Venus Pencils, I'm a different person. And father made me president of the company."

* Rensselaer Morgan, head of Morgan, Morgan & Morgan, did not receive one cent for this testimonial, yet he might have accepted it. But we thank him, instead. Here's to being Chairman of the Board, Rennie.



 This advertisement appears in Collier's and Time.

> What we say in this advertisement to the general public is different from our message to you. Architects and Engineers are not so much excited about smoothness in pencils. They assume that. What they are interested in is accurate grading.

> As you know, Venus Pencils come in 17 shades of black—not an extraordinary fact.

Their real fame lies in their uniformity, year in and year out. Costly tests and elaborate supervision insure every pencil of any one grade being identical.

You can rely on their precise grading.

Perhaps that's why Venus Pencils are the largest selling quality pencils in the world.

Venus Pencils are also made in Toronto, Canada, by the Venus Pencil Company, Ltd., and in London, England, by the Venus Pencil Company, Limited.

AMERICAN PENCIL CO. HOBOKEN, N. J.

COMMANDS ATTENTION

One reason why Time is so effective a medium for advertisers in the building field is that most Time readers, in addition to being prospects for home building, are also prospective customers for office, factory, institution, or one of the many other major branches of building.

And the main reason for TIME's strength in the field is that TIME is important to its readers and commands their attention.



In an advertisement in TIME, readers were offered for \$1 an issue of the Architectural Forum containing plans for 107 houses. In three weeks 3,367 TIME readers replied, enclosing \$1 in cash or check. Soon the total reached 7,000.

This tangible evidence of building activity supports the judgment of manufacturers of building products who, for the past four years, have bought more advertising pages in TIME than in any other general magazine.

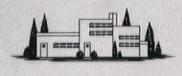




Dozens on dozens of subscriber checks show that Time is read by 20% to 50% of the officers and directors of any U. S. company. And every magazine preference survey in recent years shows that Time is the favorite magazine of business executives, department store executives, etc., etc.

Stainless Steel

FOR THE PRIVATE HOUSE





An interesting ventilator treatment in Stainless Steel. The stove, doors, and table are also stainless.

STAINLESS STEEL in applications such as these combines utility with beauty. It will not rust, tarnish, or stain. Because it is uniform in composition throughout, it will not pit, chip, or peel. It can be washed as easily as glass...Your client's satisfaction is assured if you specify stainless steel wherever permanent beauty and corrosion-resistance are factors.

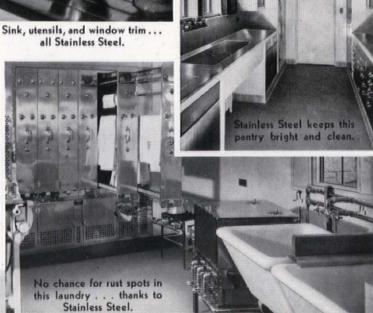
Electromet, through thirty years' practical experience with ferro-alloys, and stainless and other alloy steels, can help you apply stainless steel to your designs. If you have a problem, write us. We may have the answer.

ELECTRO METALLURGICAL COMPANY
Unit of Union Carbide and Carbon Corporation

THE STATE OF THE S

Carbide and Carbon Building, 30 East 42nd St., New York, N.Y.

Electromet Ferro-Alloys & Metals





THE NEW SUNBEAM AIR CONDITIONING UNIT For Oil, Coal, Coke, Gas



In Winter:
The Sunbeam Air
Conditioner heats
(using oil,
gas or coal
for fuel);
ventilates;
humidifies;
filters and
circulates
the air.

In Summer: It cools and dehumidifies using mechanical refrigeration or cold well water; ventilates; filters and circulates the air. (Without mechanical refrigeration, which may be added at any later time, there is available the cooling effect of circulating air.)

Sunbeam Air conditioning, not so long ago, was limited almost exclusively to palatial homes in the upper price brackets. Today its advantages are available to small, low priced homes as well. It is real air conditioning—thoroughly tested, entirely practical.

The gentle flow of conditioned air is forced under pressure to every corner of the house. Each room has its own inconspicuous grilles, with ducts accurately sized to each room's needs. Thus the air in each room is properly conditioned—warmed, humidified, filtered and circulated—under automatic control.

But there is more to Sunbeam Air Conditioning than merely its functions. More to Sunbeam Air Conditioning than a model for every size of residence, for every type of fuel, and for every budget. Half a century's experience in heating and air handling, plus actual air conditioning installations in homes that have performed successfully for the past five years, backs the product with a reputation for integrity and reliability.

Sunbeam Engineers will be glad to design your air conditioning layouts from your building plans and specifications. The service is free. Write today for full particulars.

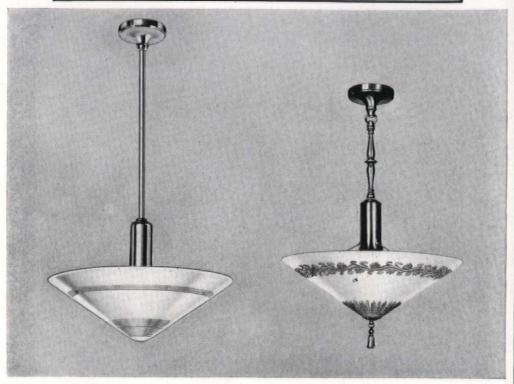
THE FOX FURNACE CO., ELYRIA, OHIO

46

THE POPULAR CHOICE

MAGNALUX

MODERN STANDARD OF ILLUMINATION



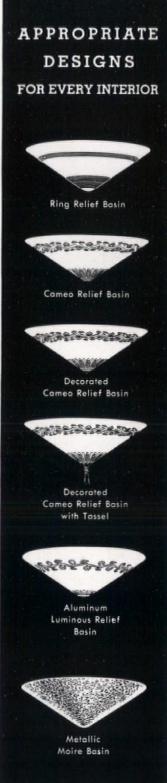
The high standard of illumination set by Magnalux can be secured only from the *genuine* product of Westinghouse.

One important feature distinguishes Magnalux from other luminous indirect luminaires... while greater light is reflected to the ceiling, the exterior surface of the basin remains soft, subdued and rich in color quality. The basin blends into the general room illumination effect, thus producing a distinctive atmosphere of quality and comfort.

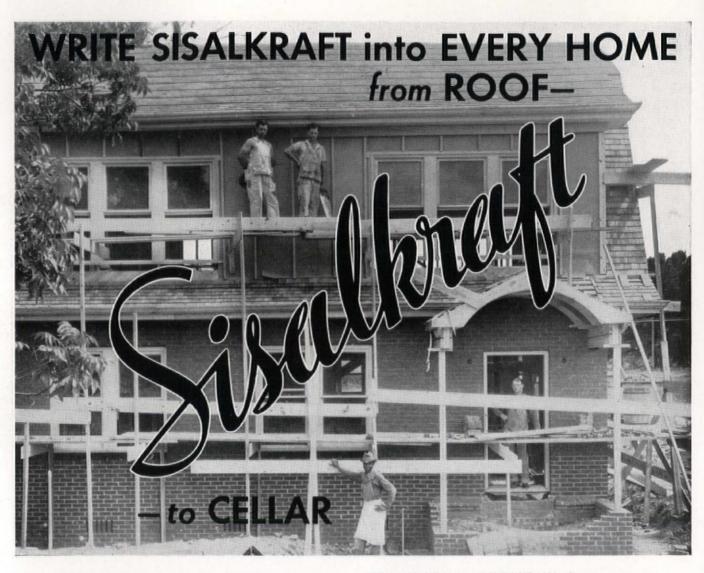
This unusual combination of high

efficiency and low surface brightness in Magnalux is achieved through the selected increase of the glass thickness in the zone of the lamp filament . . . and through use of exclusive Galax glass.

Stores, shops, offices, schools and banks in increasing number are standardizing on Magnalux. Be sure you have the latest catalogs...61,250 and 61,255. For complete details see your Westinghouse Distributor, or write Westinghouse Electric & Mfg. Co., Lighting Division, Edgewater Park, Cleveland, Ohio.







SISALKRAFT is quality building paper—
the building paper that wraps up a
home in a wind-proof and damp-proof
blanket and protects the most valuable purchase of a lifetime.

SISALKRAFT is tough, strong and durable. Because it is wind, dust and waterproof, it makes a home more comfortable under all conditions. It eliminates costly repair bills because it won't rip, tear or puncture when it is being put into place. Try and tear a sample.

SISALKRAFT is ECONOMY from every viewpoint. It belongs in every home—under roofing, under flooring and over sheathing. SISALKRAFT is very inexpensive—cost but a small fraction of the total building—about \$1.10 to cover a space 10' x 10'.

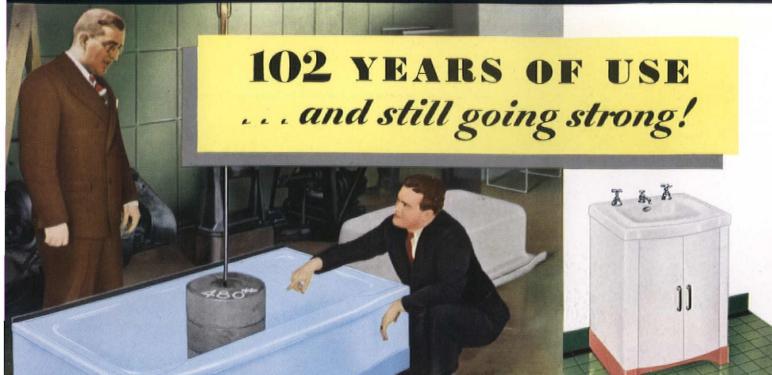
Put SISALKRAFT in your drawings and specifications and you will know the job has been properly done for ten, twenty or thirty years from now.

SISALKRAFT can be quickly secured from lumber dealers everywhere. We will gladly send you self-demonstrating samples, typical specifications and AIA files.

SISALKRAFT

"more than a building paper"

THE SISALKRAFT COMPANY, 205 West Wacker Drive, Chicago, Illinois
NEW YORK
SAN FRANCISCO



Above is a photograph of a dramatic test—a flexing test that would tear the heart out of a guitter. A 480-pound weight - more than 300 pounds heavier than the average person-was lowered and raised in the tub, flexing the metal 23 times a minute, for 139,000 times! The metal and porcelain flexed in unison and not a defect in the enamel or the metal showed up. It would take a family of four people, each weighing 480 pounds and each taking a bath every day in the year for 102 years, to equal this wear and usage. Yet, the base does not flex at all when any person steps into the tub.

Brigsteel Beautyware formed metal fixtures are twice as strong, but they weigh only onethird as much as cast iron fixtures. This light weight is obviously of prime importance to the architect, to the builder and to the home owner. Brigsteel vitreous porcelain finishes, in 83

Above is shown the finest cabinet sink on the market. Vitreous porcelain or high-

> two-tone combination; acid resisting; easily cleaned overflow-an exclusive feature.

baked enamel finish.

Wide Rim Seat Tub: a safety and utility fea-ture; Embossed Serpentine Bottom, with the safety tread; Lip Flange for tiling-in.

porcelain cabinet lavatory. Deep, wide basin; convenient, roomy utility ledge; large storage space; two polished plate glass shelves; recessed base for toe room-are features.

Above is shown the first vitreous

gorgeous color combinations, fused by a special process on pure Armco Ingot Iron, give rare beauty, long life and superb quality to Brigsteel Beautyware.

The Briggs Department of Design and Color will gladly cooperate with you on new, practical color combinations.

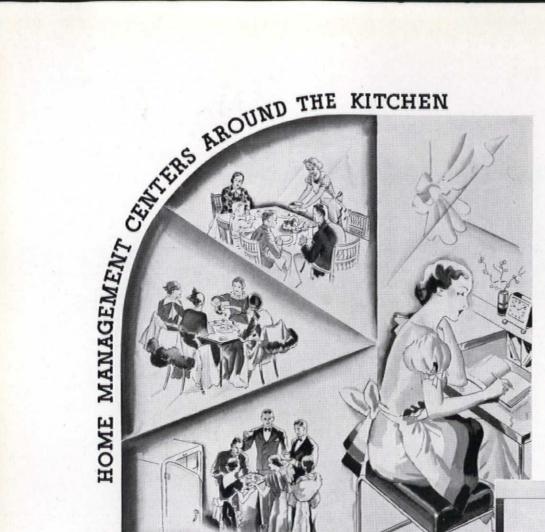
Wholesalers all over the country are now provided with specially-designed fittings made for Brigsteel Beautyware by leading brass goods manufacturers.

Ask your Master Plumber for descriptive literature, roughing-in drawings and specification data, or, if you prefer, write Brigsteel, Detroit.

Plumbing Ware Division Popular, pedestal type BRIGGS MANUFACTURING COMPANY lavatory; beautiful Detroit, Michigan







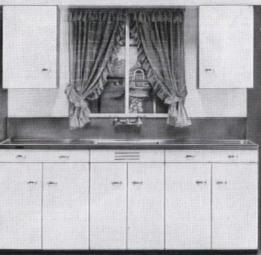
THE first thought in better homes is in the kitchen. It is there that the greatest improvements are possible and the modernizing most effective.

In this field Elgin has pioneered the development of steel kitchen cabinets which have become part and parcel of the Modern Kitchen idea.

It is Elgin who makes the cabinets that have appeared in most of the national advertising of the modern kitchen. It is Elgin who made the cabinets displayed in 12 exhibits at the Chicago World's Fair.

Right now Elgin Steel Kitchen Cabinets are on display in model kitchens in over a hundred cities. The two Elgin lines lead in style, convenience, and economy.





Cabinets for small space assemblies like this, \$75 and up.

Write for comprehensive booklet "Heart of the Home." Every architect, builder, and home owner should read it. Sent on request.

- 20 Special convenience features.
- · Regular units fit any space.
- Two lines, priced to fit the budget.
- Advanced construction features.
- · Easy to install in new or old kitchens.

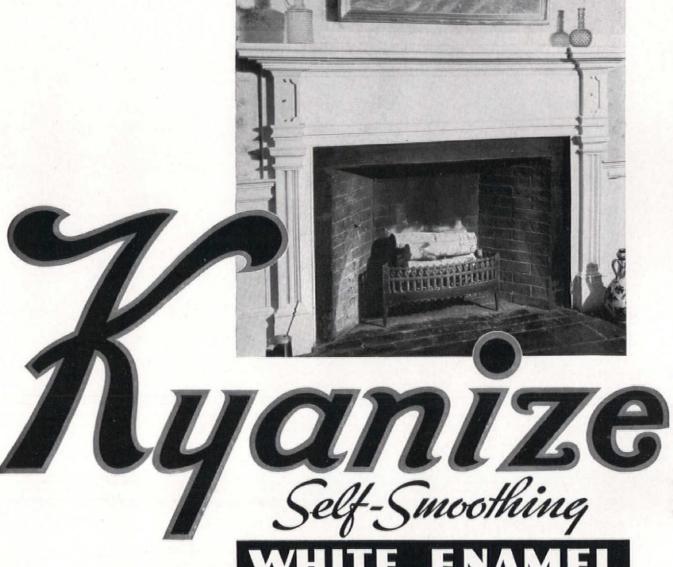
Elgin



STEEL KITCHEN CABINETS ELGIN STOVE & OVEN CO.

651 North State Street

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A pure white durable enamel universally approved by architects familiar with it. A serviceable long-oil enamel that will not crack, check or peel on inside or outside surfaces.

Architects can specify Kyanize self smoothing White Enamel and feel certain of results skilled painters are glad to use it because of its laborless free-flowing application clients are invariably delighted with the smooth satiny completed work.

Special Offer

Architects' Clip the coupon, and send for the 12 Kyanize measured drawings in portfolio form, partly illustrated at the left. Explicit blue print directions for reproducing authentic colonial details sent you with our compliments.



BOSTON VARNISH COMPANY, Everett Station, Boston, Mass.

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Gentlemen: Without obligation, please send your portfolio of twelve Kyanize measured drawings of authentic colonial details.

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49

Kyanize Self J

-England has been building houses at 15 times the per capita rate of the US -the US house market doubles with every \$2,000 lopped off the \$7,000 house largest number of US houses ever built in 1 year (1925) 269,232* -smallest number of US houses built in 1 year (1934) since the war 14,126* -of each dollar spent on a small house directly and indirectly labor gets 70 cents ★ US Department of Labor estimate for 257 identical cities

From the day the Mayflower touched its Eastern shore, this country's greatest economic blessing has been its movable frontier. It swung, in a golden arc, to the Pacific; it sank, in a black one, to the bowels of the earth. And, about a decade ago, it stopped moving: there was left, apparently, no further resource, no further market to tap. But that there does remain in an old, unsuspected quarter at least one more great untouched market has latterly become apparent. That market is five million families big.* It is composed of those families who can pay between \$2,500 and \$5,000 for a house. An unadorned statistic like this has little immediate effect on the imagination. But close your eyes for a minute and think about five million small houses and you will uncover a number of implications. The one that comes to mind first is that five million houses is a lot of houses, and that if this number or any considerable part of it were built within a decade, the U. S. would boom hugely.

The one that comes to mind next, of course, is that very few of these families ever had a good small house built for them. They have had their choice of flimsy walls, hand-me-downs, and apartments. But not of good new houses. Notice, parenthetically, that it is houses they want. The continental solution to housing may be the multi-family dwelling; so, eventually, may ours. But urban and suburban America today prefers its houses in groups of one.

These five million houses present the most important opportunity in the U. S. today. Or, if you feel the figure is too high, these one million small houses. To build them means recovery (Great Britain built its way out of the depression). It means a greater measure of social stability (not for nothing is a man's house called his castle). And, most pertinently to this page, it means a new architectural frontier.

^{*}Brookings Institute figures place the number of non-rural families with incomes between \$1,500 and \$4,000 slightly higher than 5,000,000.

The people who have built small houses in the past have, with few exceptions, built without benefit of architect, and houses built without architect are never the best houses. Only the architect, by training if not by experience, is equipped to approach the problem of the small house scientifically, esthetically, and with the sure social instinct of the professional man. And it is these attributes which impel him toward the small house.

But, in recent years at least, the architect has not been particularly interested in the small house. If he charged a small fee there was no money in it; if his fee was high there was no house in it. Such considerations notwithstanding, the architect is today designing small houses, confident that he can solve the architectural problem, hopeful that the economic problem will solve itself. All of which is fortunate for the small house and those who live in it. In this issue The Architectural Forum presents 52 small houses designed by architects. The collection is important, not only because the houses presented are good small houses, but because it gives definition to an intelligent advance into a great new field.

The rest of this issue is an analysis of small house problems:

THE CHARACTERISTICS OF THE SMALL HOUSE

THE COSTS

THE MATERIALS

THE PLANS

THE EQUIPMENT

ECONOMIES, PRACTICED AND PROJECTED

RELATED UNITS DESIGNED FOR HUMAN OCCUPATION

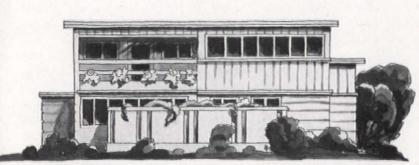
THE SMALL HOUSE IN THE PLANNED COMMUNITY

Reserved for later discussion is the profession and the small house as a problem in architectural economics. Omitted is the social background of the problem. The technique of planning could have been more fully examined. European solutions might have been included. In this issue look only for a statement of the small house problem and its best contemporary answers. As these answers improve and multiply, as the facets of the problem assume sharper definition, The Architectural Forum will continue to report progress.

1880



1913



1936

DRAWINGS BY MADELAINE KROLL

SEQUENCE

The house of the 80's was no easier to look at than to live in: home, were it ever so humble, had to have its quota of scrollwork, patterned slate roofs, and if not a tower, at least a turret. Despite the cost of these minor embellishments, however, the owner got more enclosed space for his dollar than he ever has since. Equipment, one of the largest items in today's house, was almost non-existent; plumbing was rudimentary, wiring was unknown, and heating was done by a large furnace with rambling ducts or by individual units. There were no gadgets and even the small house shrieked for and usually got a mother's helper. And if any money was left over it went into antimacassars and cast iron lawn sculpture.

The pre-War house showed the present trend unmistakably. The complete bathroom appeared as an indispensable part of every residence. The growing demand for low priced houses was reflected in the eye-searing but profitable operations of the jerry-builder, whose houses sold like hot cakes and were only slightly more substantial. Planning was emphasized and "bungalow" was the accepted name for the small house. Architects, busy with larger work, showed little or no interest in small dwellings. A few lone spirits scattered through Europe and America were proclaiming that mass production was going to have as much of an effect on houses as it had on bicycles and alarm clocks. To these voices crying in the wilderness no attention was paid.

TODAY finds about 79 cents of the building dollar going into the house structure: the rest goes for mechanical equipment. The twenty years since the War have developed undreamed-of luxuries which the small house buyer considers necessities. Servants are only for the leisure class, to quote Mr. Morgan, and those who must work are automatically warmed, electrically illuminated, and vacuum-cleaned. Because maximum convenience is mandatory, the plan has become the most important consideration in house design; exteriors, while still favoring Colonial, are simpler. Structurally houses are much as they were 50 years ago, and wood is still practically the universal material; due to the combined efforts of engineers, termites, and prefabricators, however, metal frames and concrete are gaining ground. Architects are acutely conscious of the small house after the seven lean years, and their efforts have resulted in improvement. The solution to really low cost shelter. nevertheless, has yet to appear, nor is its early arrival in sight.

85 HOUSES IN TABULAR SURVEY

LOCATION

COST

	CITY	STATE	TOTAL	STRUCT.	PLUMB.	HEAT.	ELEC.	CUBAGE	CU. FT.	FLOOR AREA	SQ. FT. COST
1	CAPE ELIZABETH	ME.	\$5,000	\$4,050	\$370	\$370	\$210	20,500	\$.24	1838	\$2.72
2	AUBURN	ME.	5,000	4,150	350	350	150	20,000	.25	1600	3.12
3	E. HARTFORD	CONN.	4,975	4,000	350	450	175	20,000	.25	1462	3.40
4	ROCKY HILL	CONN.	4,620	3,537	375	575	133	21,532	.21	1100	4.20
5	TAPPAN	N. Y.	4,500					15,000	.30	1316	3.42
6	HEMPSTEAD	N. Y.	3,200	2,400	365	275	60	15,525	.21	1230	2.60
7	GRINDSTONE IS.	N. Y.	2,222	1,959		263		6,827	.33	601.5	3.69
8	FOREST HILLS	N. Y.	4,900					20,250	.24	1796	2.73
9	E. GREENBUSH	N. Y.	4,030	3,468	227	215	120	15,200	.26	1354	2.97
10	PINES LAKE	N. J.	2,000	1,765	200		35	11,800	.17	695	2.88
11	HARVEY CEDARS	N. J.	3,600	2,975	300		125	17,000	.21	1700	2.12
12	CONVENT	N. J.	4,400	3,200	460	600	140	20,430	.22	1900	2.31
13	SHREWSBURY	N. J.	4,090					23,208	.18	1411	2.90
14	LAKE MOHAWK	N. J.	4,225	3,300	320	450	155	15,590	.27	1272	3.32
15	LAKE MOHAWK	N. J.	3,900	3,100	285	420	105	12,420	.31	1130	3.45
16	LAKE MOHAWK	N. J.	5,000	4,055	355	480	110	19,500	.26	1545	3.23
17	NEW HOPE	PENN.	2,420					11,961	.20	800	3.02
18	KANAWHA CITY	W. VA.	4,710	4,059	445		216	14,855	.32	1380	3.41
19	TROY	0.	3,300	2,900	200	200		11,700	.28	936	3.52
20	PAINESVILLE	0.	4,580	3,490	390	475	225	14,300	.32		
21	OXFORD	0.	4,975					19,687	.25	1820	2.70
22	LANCASTER	0.	3,115	2,319	291	135	100	16,500	.19	1369	2.27
23	CINCINNATI	0.	4,687					20,450	.23		
24	TOLEDO	0.	4,990	3,600	490	700	200	21,616	.23	2128	2.34
25	ARTHUR	ILL.	5,000	3,466	533	510	510	26,400	.19	2352	2.13
26	BLOOMINGTON	ILL.	4,951	4,212	347	240	151			1589	3.12
27	FARM CITY	ILL.	4,185	3,500	350	250	85	27,000	.16	1471	2.84
28	LAPEER	місн.	1,750	1,515		160	75	15,060	.12	1060	1.65
29	LANSING	місн.	4,706			200	***	18,048	.26	1460	3.20
30	ST. MARY'S LAKE	MICH.	4,310	3,149	355	165	210	18,270	.24	1500	2.90
31	SHORE ACRES	WISC.	4,910	3,500	650	550	210	21,000	.23	1370	3.60
32	WISCONSIN RAPIDS	WISC.	3,800	2,900	400	300	200	18,000	.21	1440	2.64
33	WISCONSIN RAPIDS	WISC.	4,157	3,100	635	242	180	18,000	.23	1200	3.46
34	GRANVILLE	WISC.	4,980	0.070	400	DOE	150	26,000	.19	1935	2.60
35	BARREN	WISC.	4,400	2,870	420	805	150	15,000	.29	1240	3.55
36	OSHKOSH	WISC.	2,950				75	10,250	.29	780	3.80
37	MADISON CENTER	WISC.	4,100				75	20,500	00	1213	3.38
38	RICHLAND CENTER	WISC.	4,500					20,000	.22	1820 1651	2.47
39	MADISON MINNEAPOLIS	MINN.	4,150	3,092	365	348	150	16,000	.26	1390	2.96
40	TOPEKA	KAN.	3,830	2,680	350	450	150	16,151	.23	1314	2.98
41	UNIVERSITY CITY	MO.	4,850	2,000	000	200	200	16,300	.30	1561	3.11
42	FESTUS	MO.	4,230					23,850	.18	1328	3.19
43	GLASGOW	MO.	4,750	3,505	495	450	150	22,000	.22	1383	3.43
44	LITTLE ROCK	ARK.	4,800	4,280	270	70	180	23,772	.20	1317	3.65
46	LOUISVILLE	KY.	4,750	3,950	375	330	95	22,200	.21	2173	2.18
47	STARKVILLE	MISS.	4,960	3,900				35,818	.14	2169	2.26
48	STARKVILLE	MISS.	3,968	3,480	257	88	143	31,623	.13	1800	2.20
49	NASHVILLE	TENN.	4,650	4,002	358	175	115	26,500	.18	1416	3.28
50	NASHVILLE	TENN.	4,850	4,130	400	200	120	22,000	.22	2198	2.21
51	BALTIMORE	MD.	4,000					15,870	.25	946	4.23
52	BALTIMORE	MD.	4,950						.22	1513	3.27
53	SILVER SPRINGS	MD.	3,700	2,980	165	385	130	16,300	.23	950	3.90
54	CHARLOTTESVILLE	VA.	3,503	2,753	211	327	61	8,906	.39	785	4.45

	WALL	21Kf		NAND	FIN		тн	HEAT	NU	мве	R	۲۱	LAI	1		AR SQ.	FT
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Wd.	Ins. L.	PI.	Asp. Sh.		G. I.	Lin.	PI.	Stm.	2B	5	1	10	2	Yes	Game R.	288	10
Wd.	Quilt	PI.	Asp. Sh.	Quilt	G. I.	Rubb.	PI.	W. A.	2	6	1	****	3	Yes		190	1
Wd.	Refl.	PI.	Wd. Sh.	Rk. WI.	Cop.	TI.	TI.	H.W.	2B	7	11/2	10	2	Yes		276	1
Wd.	Ins. L.	PI.	Wd. Sh.	Refl.	Tin	Lin.	PI.	H. W.	18	4	1		2		Pty.	275	
Cin. Bl.		Pl. Pt.	Asp. Sh.	Rk. WI.	Cop.	Lin.	Pl. Pt.	Stm.	2	5	1	10	3	No		240	
Wd.		PI.	Wd. Sh.		Cop.	TI.	TI.	A. Cd.	2B	6	1		3	Yes		300	1
Wd		Wd.	Wd.		Cop.	Wood	Wd.	Fpl.	1	3	1		1	No		289	
Stucco		PI.	Prep. R.	Rk. WI.	Cop.	Wood	PI.	Stm.	1B	6	11/2	10	3	Alc.		322	
Wd.	Refl.	PI.	Asp. Sh.	Refl.	Cop.	TI.	PI.	W. A.	2B	6	1	10	3	Yes		198	
Logs		Logs	Asp. Sh.		Cop.	Lin.	Wd.		1	4	1	10	2	No		140	
Wd.	Ins. Bd.	Ins. Bd.	Can.	Ins. Bd.	Cop.	Lin.	WI. Bd.		21/2	6	1	10	3	Alc.		345	
WI. Bd.	Ins. Bd.	Ins. Bd.	Prep. R.			Conc.	WI. Bd.	Stm.	18	6	1	10	3	Yes	Ldy.	361	
Wd.	mai bu.	PI.	Asp. Sh.		Cop.	Lin.	TI.	H. W.	2B	6	1	10	3	Yes		204	
Wd.	Rk. WI.	Pl. Bd.	Wd. Sh.	Rk. WI.	Cop.	Wd.	TI. Bd.		2B	5	1	10	3	No		336	
Wd.	Rk. WI.	Pl. Bd.	Wd.	Rk. WI.	Cop.	Lin.	TI. Bd.	A. Cd.	11/2	5	1	10	3	No		217	
Cin. Bl.	nk. Wi.	PI.	Wd. Sh.	Rk. WI.	Cop.	Wd.	PI.	A. Cd.	2	6	1	10	3	Yes		242	
Wd.	0	PI.	Wd. Sh.	Quilt& I. B.	-	Lin.	PI.	W. A.	1	4	1		1	Yes		365	
	Quilt & I. L.		Wd. Sh.	Rk. WI.	Tin	TI.	PI.		2	5	1	10	2	Yes		265	
Wd.	Rk. WI.	PI.	Stl.	Rk. WI.	Stl.	Lin.	Stl.	W. A.	1	4	1		2	Alc.		265	
Steel	RK. WI.	Sti.	Asp. Sh.	Ins. Bd.	Tin	Lin.	PI.	W. A.	2	5	1	10	3	Alc.	Ldy.	220	
Cin. Bl.	0	PI.		Quilt	Tin	Lin.	PI.	W. A.	2B	6	1	10	3		Sty., Ldy.		
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Wd.		PI.	Asp. Sh.			Wd.	PI.	W. A.	1B	5	1	10	2	Yes	Ldy.	225	
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	. Ins. Bd.	WI. Bd.	BitUp	Ins. Bd	G. I.	213	PI.	W. A.	2B	8	21/2		3	Yes		285	
Wd.	Rk. WI.	PI.	Asb. Sh.	Rk. WI.	Cop.	TI.	PI.	W. A.	1B	6	1	10	2	Yes		250	
Bk. Vr.	Rk. WI.	PI.	Asp. Sh.	Rk. WI.	G. I.		PI.	W. A.	0.00	5	1		2			300	
Wd.	Refl.	PI.	Wd. Sh.	Refl.	Tin	TI.	WI. Bd.	W. A.	2B	6		10	2	Yes		218	
Wd.	Ins. Bd.	WI. Bd.	Asp. Sh.	Ins. Bd	G. I.	Lin.		W. A.	2B		1	10		No	Later	209	
Wd.		PI.	Wd. Sh.		G. I.	TI.	PI.	100000000000000000000000000000000000000	2B	5	11/2	10	2	Yes	Ldy.		
Asp. Sh.	Ins. L.	PI.	Asb. Sh.	Fill	G. I.	Lin.	PI.	W. A.	1B	41/2	1	10	2	Yes		245	
Stone	Ins. Bd.	PI.	Asb. Sh.	Refl. & I. B		Wd.	PI.	W. A.	18	4	1	10	2	No		325	
Wd.	Refl. & I. B.		Asb. Sh.	Refl. & I. B		Lin.	PI.	W. A.	2B	6	1	****	3	Yes	Ldy.	299	
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Bk. Vr.	Rk. WI.	PI.	Wd. Sh.	Rk. WI.	G. I.	I manufacture and	PI.	W. A.	2B	5	1	10	2	Yes		192	
Logs	Fill	Wd.	BItUp	Fill		Wd.	Wd.	H. W.	1	5	1	10	2	Alc.		225	
Wd.		PI.	Wd. Sh.	Ins. Bd.	G. I.	land a	PI.	W. A.	2B	4	1	****	2	Alc.		170	
Conc. Bl.		PI.	BltUp	Ins. Bd.	G. I.	TI.	PI.	W. A.	1½B	5	1	2C	3	No		150	
Wd.		PI.	BltUp	Rk. WI.	G. I.	TI.	PI.	W. A.	2	5	1	10	2	No		290	
Wd.		WI. Bd.	BltUp	Rk. WI.	G. I.	Lin.	WI. Bd.		2	5	1	10	2	No		375	
Wd.	Quilt & I. L	PI.	Wd. Sh.	Quilt & I. L	Cop.	Lin.	PI.	W. A.	2B	5	1	****	2	Yes	Ldy.	216	
Stuc.		PI.	Wd. Sh.	Rk. WI.	Tin	Lin.	Lin.	A. Cd.	18	4	1		2	No	Ldy.	375	
Bk.		PI.	Asp. Sh.	Rk. WI.	Cop.	TI.	TI.	W. A.	2B	5	1		2	Yes		200	
Bk.		PI.	Asp. Sh.		1.	TI.	PI.	W. A.	18	4	1	****	2	Alc.		203	
Wd.		PI.	Asp. Sh.	Rk. WI.	G. I.	TI.	TI.	A. Cd.	1B	4	1	10	1	No	Brk, Rm.	420	
Bk. Vr.	Ins. Bd.	PI.	Asp. Sh.	Ins. Bd.	G. I.	TI.	TI.	G. Un.	1	7	1	****	2	Yes		270	
Bk. Vr.		PI.	Asp. Sh.	Ins. Bd.	G. I.	TI.	TI.	Stm.	2B	61/2	1		3	Yes	Brk. Rm.	273	
Bk. Vr.		Wd.	Asp. Sh.		G. I.	TI.	TI.	G. Un.	1	7	2		21/2	Yes	Brk. Rm.	336	
Wd.		Can.	Asp. Sh.		G. I.	Lin.	Can.	G. Un.	1	6	2		3	Yes	Brk. Rm.	322	
Bk. Vr.		PI.	Asp. Sh.		Tin	TI.	TI.	W. A.	18	6	1		2	Yes	Brk. Rm.	265	
Wd.		PI.	Asp. Sh.	Rk. WI.	Tin	Lin.	Lin.	H. W.	2	6	2	10	3	Yes		308	
Wd. & Bk		PI.	Slate	Rk. WI.	Cop.	TI.	TI.	H. W.	2B	5	1		2	Yes		200	
Wd.		PI.	Asp. Sh.	Rk. WI.	Tin	TI.	Wtp. P.	H. W.	2B	5	1	10	2	Yes		240	
Wd.		PI.	Asp. Sh.		G. I.	TI.	PI.	H.W.	2	51/2	1		2	Yes		200	
Wd.	Ins. L.	PI.	Asp. Sh.		1.	Lin.	Cem.	H. W.	1	3	1		1	No	Heat.Rm	270	

APRIL - 1936

	CITY	STATE	TOTAL	STRUCT.	PLUMB.	HEAT.	ELEC.	CUBAGE	CU. FT.	FLOOR AREA	SQ. FT COST
55	CHARLOTTESVILLE	VA.	4,955	4,034	225	627	69	14,637	.34	1339	3.70
56	CHARLOTTESVILLE	VA.	4,875	3,789	485	475	126	17,008	.29	1580	3.10
57	BELLE HAVEN	VA.	4,970	3,385	500	795	120	19,150	.26	1650	3.00
58	HIGH PT.	N. C.	4,960	3,400	550	450	190	42,000	.12	2506	1.98
59	WINSTON-SALEM	N. C.	4,144	3,120	389	270	125	19,388	.21	1253	3.29
60	RALEIGH	N. C.	4,802	3,827	383	450	142	19,460	.25	1628	2.95
61	TAMPA	FLA.	3,700					11,115	.33	1084	3.40
52	WINTER PK.	FLA.	5,000	3,615	710	565	110	23,780	.21	2084	2.39
53	GAINESVILLE	FLA.	3,600		480		80	20,707	.18	1304	2.76
54	COCONUT GROVE	FLA.	3,200	2,650	225		125	15,800	.20	1314	2.44
65	COCONUT GROVE	FLA.	4,900	3,852	550		138	17,000	.29	1530	3.20
66	COCONUT GROVE	FLA.	5,000	3,850	508		250	19,600	.25	1302	3.84
67	COCONUT GROVE	FLA.	4,150	3,170	449		160	18,500	.22	1238	3.35
8	COVINGTON	LA.	3,800					31,950	.12	1900	2.00
9	COLLEGE STA.	TEX.	2,700	2,331	362		107	15,850	.17	1263	2.14
0	SAN ANTONIO	TEX.	4,340	3,840	350		150	12,600	.34	1919	2.26
1	DALLAS	TEX.	4,500	3,890	350	80	180	22,500	.20	1316	3.42
2	AUSTIN	TEX.	4,200	3,696	350		154	16,590	.25	1293	3.24
3	AUSTIN	TEX.	4,960	4,127	659	20	153	22,862	.22	1578	3.15
4	BEAUMONT	TEX.	4,800							2570	1.87
5	BEVERLY HILLS	CAL.	4,550					15,180	.30	1571	2.89
6	LOS ANGELES	CAL.	4,400	3,725	450	125	100	23,055	.19	1903	2.31
7	BERKELEY	CAL.	3,800	3,215	406	74	105	19,476	.19	1913	1.99
8	HOLLYWOOD	CAL.	5,000	3,750	435	378	494	20,195	.25	2894	1.73
19	SAN MARINO	CAL.	5,000	4,214	437	182	167	20,632	.25	1550	3.23
30	PULLMAN	WASH.	4,877	3,898	536	285	158	27,700	.18	1869	2.61
1	YAKIMA	WASH.	4,000	3,335	250	290	125	26,000	.15	1982	2.02
2	SUMNER	WASH.	4,825	3,625	275	700	225	24,000	.20	2282	2.13
3	VANCOUVER	WASH.	3,475	2,411	330	303	219	22,770	.15	1220	2.84
4	LAKE SERENE	WASH.	3,400					22,700	.15	1359	2.50
5	HELENA	MONT.	4,200	3,275	425	350	150	12,122	.34	980	4.30
/FI	RAGES		\$ 4270	% 79.1	% 9.2	% 8.2	% 3.5	cu.ft. 18.575	\$.23	sq.ft. 1448	\$ 2.95

The 85 houses* in the above tabulation may be taken as representative of architect-designed dwellings of \$5,000 and under. They were built in all sections of the country, and for convenience of comparison are grouped by States and regions. An examination of the tabulation brings to light these interesting facts, most surprising of which is that in these examples there is no appreciable variation in construction costs between different sections of the country. The average cubic foot cost in Northern States, for example, is 23.1 cents; in the South the cost is 22.7 cents. North and South show marked differences in some respects, however. The one-story house is most common in the South and Southwest, and this region seems to prefer galvanized iron flashing to copper. For heating, of course, a much less elaborate plant is required in the South. The inexpensive warm air heating system was the most widely used. Insulation is fairly common, particularly in the North although by no means universal. Plaster is the most common interior finish, even in bathrooms, tile and wallboard being used to some extent. In spite of the appearance of numerous new structural systems, almost all of these houses are built with wood frames; if and when other types of structure are used for the house below \$5,000 it will probably only be after wide use in the higher price brackets makes cheap production methods feasible.

* The numbers do not correspond with numbers of houses shown in the portfolio in this issue.

	WALL	NSTR	UCTIO	N AN	D FI		тн	HEAT	NUI	N B E	R	P	LA	N		A R	E A FT.
EXT. FINISH	INSUL.	INT. FINISH	FINISH	INSUL.	FLASH.	FLOOR	WALL		STOR.	NO. RMS.	NO. BATHS	GAR.	BED RMS.	DIN. RM.	OTHER ROOMS	LIV.	DIN.
Wd.	Ins. L.	PI.	Asp. Sh.		l.	Lin.	Cem.	H. W.	1	51/2	1		2	Yes	Heat.Rm	. 261	152
Fld. St.		PI.	Slate	Rk. WI.	Tin	Lin.	Lin.	H.W.	2	5	1	20	2	Yes	Pty.	270	
Fld. St.	Rk. WI.	PI.	Slate	Rk. WI.	Cop.	TI.	Wtp. P.	H. W.	2B	5	1	10	2	Yes		264	143
Bk. Vr.		WI. Bd.	Asp. Sh.	Ins. Bd.	G. I.	Lin.	WI. Bd.	W. A.	2	6	1	20	3	Yes		285	180
Wd.		PI.	Asp. Sh.		1.	Lin.	TI. Bd.	W. A.	18	6	2		3	Yes		260	63
Wd.		PI.	Asp. Sh.		G. I.	TI.	Cem.	H. W.	2B	61/2	1	10	2	Yes	Brk. Rm.	240	121
Bk.		Wd.	G. I.		G. I.	TI.	TI. Bd.		1	4	1	10	2	No		280	
Wd.		PI.	Asb. Sh.	Rk. WI.	Cop.	TI.	PI.	W. A.	2B	6	2	10	3	Yes		315	140
Bk. Vr.		PI.	Asp. Sh.		Cop.	TI.	Cem.	G. Un.	1	6	1		3	Yes		266	168
Wd.		Wd.	Wd. Sh.	Ins. Bd.	Cop.	Wd.	WI. Bd.	100	1	5	1		3	No		286	
Wd.		PI.	Wd. Sh.	Ins. Bd.	Cop.	Lin.	PI.	3000	2	51/2	1	10	2	Yes		315	88
Wd.		PI.	Wd. Sh.		Cop.	Lin.	PI.	1000	1	6	2		3	Yes		320	110
Wd.		Wd.	Wd. Sh.		Cop.	TI.	PI.	1 1 1 1 1	1	5	2		3	No		240	
Wd.		PI.	Asp. Sh.		G. I.	Lin.	PI.	G. Un.	1	5	21/2	10	2	Alc.	Ldy.	405	85
Wd.		Wd.	Wd. Sh.		G. I.	Lin.	WI. Bd.	G. Un.	1	5	1	10	2	Yes		216	125
Bk.		PI.	Tile	Fill	G. I.	TI.	PI.		1	5	1	20	2	Yes	Brk. Rm.	360	180
Bk. Vr.		WI. Bd.	Wd. Sh.	Ins. Bd.	G. I.	TI.	TI.	G. Un.	1	6	1		2	Yes	Brk. Rm.	247	161
Bk.		Can.	Wd. Sh.		G. I.	TI.	Cem.	G. Un.	1	6	1		2	Alc.		227	110
Br. Vr.		Can.	Wd. Sh.		G. I.	TI.	Cem.	G. Un.	1	6	2	10	3	Yes		266	168
Wd.		Can.	Wd. Sh.		i.	Lin.	WI. Bd.	G. Un.	1	6	2		3	Yes	Brk. Rm.	315	210
Wd.		PI.	Wd. Sh.		G. I.	TI.	PI.	El. Un.	1	6	2		3	No	Ldy.	512	
Wd.		PI.	Wd. Sh.		G. I.	TI.	TI.		1	5	2	2C	2	Yes		392	100
Wd.		Ply Wd.	BltUp		G. I.	Wd.	Ply Wd.	G. Un.	2	5	11/2	10	2	No		222	
Stucco	Ins. Bd.	PI.	BltUp	Ins. Bd.	G. I.	Lin.	G. L.	El. Un.	3	6	2	20	3	Yes	Ldy.	300	195
Wd.	Ins. Bd.	PI.	Wd. Sh.		1.	TI.	Wtp. P.	W. A.	1	4	1	10	2	Alc.	Ldy.	288	110
Wd.		PI.	Wd. Sh.	Fill	1.	Lin.	PI.	W. A.	2B	5	1	10	1		Brk. Ldy.		
Wd.		PI.	Wd. Sh.		G. 1.	Lin.	PI.	W. A.	2B	51/2	2				Play Rm.		
Wd.	Ins. Bd.	PI.	Wd. Sh.		1.	Lin.	PI.	A. Cd.	2	6	11/2	10	2	Yes	Ht.,Ldy.	322	132
Wd.		PI.	Wd. Sh.				PI.	W. A.	1B	5	1	10	2	Yes	Ldy.	260	145
Wd.		PI.	Wd. Sh.		G. I.	TI.	PI.	W. A.	1	5	1	10	2	Yes		260	70
Wd.	Ins. L.	PI.	Wd. Sh.	Fill	-	Lin.	PI.	W. A.	1	5	1		2		Pl.Rm.,St.		, 0

TOTAL COST includes architect's fee but does not include land or landscaping.

STRUCTURE COST is total cost less cost for plumbing, heating and electrical work.

PLUMBING COST includes kitchen, laundry, and bathroom equipment.

ELECTRICAL COST includes wiring and lighting fixtures.

CUBAGE is as stated by architects.

FLOOR AREA is figured as follows:

Calculated in full: the finished and livable floor area above the basement, including enclosed porches and built-in garages.

Calculated as one-half actual area: finished recreation rooms or other quarters in basement, semi-finished areas of attics, open porches. Measurements are to outside of exterior walls or enclosing partitions.

LEGEND

A. Cd.
Alc.
Asb. Sh.
Asp. Sh.
Bk.
Bk. Vr.
Blt.-up
Brk. Rm.
C.
Conc.
Conc.
Conc.
El. Un.
Fld. St.
Fpl.
G. I.
G. Un.
H. W.
Heat. Rm.

Air Conditioning
Dining Alcove
Asbestos Shingle
Asphalt Shingle
Basement
Brick
Brick Veneer
Built-Up Roofing
Breakfast Room
Car
Canvas
Cinder Block
Concrete
Concrete Blocks
Copper
Electric Unit Heaters
Field Stone
Fireplace
Galvanized Iron
Gas Unit Heaters
Hot Water
Heater Room
Iron

I. B. & Ins. Bd.
I. L. & Ins. L.
Ldy.
Lin.
Pl. Pt.
Prep. R.
Pty.
Refl.
Rk. WI.
Rubb.
St.
Stl.
Stm.
Stor.
Stuc.
Stuc.
Sty.
TI.
W. A.
Wd.
Wd. Sh.
Wl.
Bd.
Wtp. P.

Insulating Board
Insulating Lath
Laundry
Linoleum
Plaster
Plastic Paint
Prepared Roofing
Pantry
Reflective Insulation
Rook Wool
Rubber
Stone
Steel
Steam
Stories
Stucco
Stucco
Study
Tile
Warm Air
Wood
Wood Shingle
Wall Board
Waterproof Paper

TYPICAL PLANNING PRACTICE

With \$5,000 to spend on a custom-built house, how much can the owner expect? From this point down the accommodations necessarily approach a minimum. The key rooms needed for living, eating, cooking, bathing, etc., are much the same in the small house, whether it costs \$5,000 or \$3,000, with the slack taken up by extra bedrooms, perhaps a laundry and an attached garage. To arrive at a picture of today's small house, 85 architect-designed dwellings from all parts of the country were analyzed, with the following results:



BATH One bath costs about \$350 installed, and one bath is consequently all the traffic will bear in the majority of cases. Only 6 per cent of the houses had two baths; 10 per cent had a downstairs lavatory. The arrangement of bath with direct access to one or two bedrooms is found in few cases. Average practice is to place the bath so that it opens off a hall, serving all rooms alike and is usable as a lavatory for guests.



GARAGE If a separate eating space is not a necessity, the garage apparently is. Most of the houses indicated a garage of some kind; 48 per cent included an attached garage and 6 per cent had space for two cars. Handling of circulation varied, with many solutions of great convenience, such as direct connection with entrance hall or with bedroom hall.



PANTRY In the servantless house a pantry is waste space, and the well-planned kitchen is adequate for all small house requirements. Three per cent of the houses had pantries.



BASEMENT The need for large spaces in which to store fuel and place heating apparatus has been virtually eliminated by modern plants, and while the additional storage space is desirable, it can be dispensed with if necessary. Thirty-six per cent of the houses showed full basements, 12 per cent included only heater and storage space. Location of course plays an important part: 75 per cent of the houses with full or partial basements were built in Northern States.



BREAKFAST ALCOVE The comfortless nook off the kitchen, not long ago the sine qua non of the suburban house, is on the wane, although 25 per cent of the houses incorporated this space which is neither kitchen nor dining room. In the house lacking a dining room there is some reason for such a feature; curiously enough, however, the houses which showed breakfast alcoves also had dining rooms in the majority of cases. The breakfast room in the small house is apparently a survival from more spacious days when speculative builders had no better gags for selling.



LAUNDRY While not an indispensable unit, the laundry is being given more consideration in the small house—another example of the enlarging of work space at the expense of living area. Twenty-three per cent of the houses included laundries.



DINING With space at a premium, the dining room is logically one of the first to go. Tendencies in this direction are shown by the use of dining alcoves and by kitchens combined with dining or living rooms; 56 per cent of the houses had separate dining rooms, 13 per cent used alcoves off the living room, and 31 per cent, surprisingly enough, had no separate dining space of any kind. Planning here is often a matter of local custom; in some parts of the country a house lacking a dining room is not salable merchandise. As available space contracts, however, it is inevitable that the dining room be merged with other rooms, if not completely eliminated.



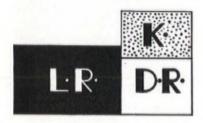
RECREATION ROOM Like the study, the recreation room is a rarity in the \$5000-and-under house, usually included when the basement space has no other use. The value of the recreation room in the small house is dubious; never larger than the living room, badly lighted, it is space which could be used to better advantage elsewhere.

BASIC PLAN ARRANGEMENTS

As the house shrinks the possible variations in plan become fewer. Kitchen, living room, and dining room are the units around which the plan is built, and if the dining room is omitted or becomes part of the living room the plan is simplified even further. Examination of a large number of small house plans reveals that the number of basic combinations is surprisingly small; variations on the type are produced by (1) the placing of the stair hall, (2) the placing of bedrooms and baths, (3) the varying of the relative sizes of the main room units.



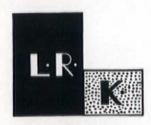
TYPE A The plan in which the living room, dining room, and kitchen are so combined as to form a rectangle which approaches a square is the commonest of small house types. It is most frequently used in the two-story house, with a stair hall dividing living and dining rooms. Its chief advantage is economy due to compactness, minimum of exterior wall surface, and concentration of heating and plumbing lines.



TYPE B This is really a variation on the first type, as the rooms are in the same relative positions. So many houses take this form, however, that it might be considered a distinct type for the purposes of this study. It is frequently found in one-story houses, particularly the rambling variety so characteristic of residential work in California. It has more flexibility than type A and has greater possibilities for exterior treatment and landscaping. As a rule it is less economical to build and maintain.



TYPE C The placing of the three units in line represents the extreme form of the rambling plan. Of the houses which fall into this class, 75% have only one story and almost all of them were built in the Southern States. This type gives a maximum of light and air and is admirably suited for large, irregular sites and to locations where view is an important consideration. With the addition of bedrooms, garage, and other services, it is frequently arranged to form a courtyard. A common variation is a plan in which the dining room has been extended out of the straight line. Where heating is an important consideration this type is most uneconomical.



TYPE D The elimination of the dining room reduces the major elements of the plan to their simplest possible form, with the single exception of the kitchen-living room, where one space takes care of living, eating, and cooking. Type D is found in all kinds of plans, ranging from the most loosely strung-out arrangements to the most compact. It is a necessary step in planning to meet a minimum price, and with the proper kind of furnishing it will produce a house in which the lack of a separate dining space results in no noticeable inconvenience.

RUILDING FOR INTENSIVE USE OF DOLLARS

IF, in an effort to produce a good house for \$5,000, you should take a \$10,000 house and reduce it to half the size, you would uncover two pertinent facts. In the first place, your half-house would cost considerably more than \$5,000. In the second place, it would be too small to attract a buyer. With \$5,000 to spend on a house, you must concentrate more of your effort on stretching the dollar than on shrinking the house.

By all odds the greatest obstacle in reducing the cost of a house is the man who most wants the cost reduced —the house buyer. If he has \$5,000 to spend he invariably expects the size of rooms and profusion of conveniences which are possible only in a house priced several thousand dollars higher. His attitude is not self-induced. The home magazines and the daily press all too often glibly paint castles in Spain which exhibit vocabulary and draftmanship without due regard to the facts of living, and the relation of price to practicality. And the "model" home which makes Mother sigh and Father reach for his check book is frequently not the model for them.

For the architect the problem is, more than anything else, one of mental reorientation. Formerly a home buyer with less than \$5,000 to spend rarely thought of calling in an architect. He considered it an extravagance. But today the public is learning-and so is the architect. Down in the \$5,000 class the architect is assimilating a brand new ideology. He is more canny about space saving. He is drawing plans and specifications with both eyes on the budget and only a sigh for the fourteen

Operative builders have up their industrious sleeves many a trick for the \$5,000 house which the architect might well learn. Notable, for instance, is the complete simplification of the floor plan achieved by one or two Eastern subdividers. It is the result of decades of unscientific trial and error—but it is good.

Bottom-rung builders have given their brothers-in-trade a bad name for shoddiness. At temperamentally the opposite pole to the architect, they have been too inclined to skimp on quality, so that stucco has at times been synonymous with camouflage. But the dreary progression of defunct subdivisions which this practice has left moldering on U.S. swamps has begun to teach its lesson to even the most obdurate. is most manifestly a legitimate compromise between quality construction and practical values in the building of homes. The nearer the architect and the builder approach-from opposite roads-this common ground, the nearer will come the good house for less than \$5,000.

CELLARS

As with many other things in building, a tradition has grown up about cellars. With changes in custom and technology, they have become unimportant, yet their use persists. The small house demands a great deal less in utilities, in the small extravagances of wealth, because it approaches more nearly the simple function of a machine for living. Thus, if there is no need for the storage of a winter's supply of food and fuel, the cellar becomes largely wasted space. Basement recreation rooms and workshops, occasionally found, are less a reflection of need than an attempt to utilize this otherwise unused space. Most heating plants can be taken out of the cellar, installed in a small space on the first floor. Coal is the only fuel which requires a large and accessible storage space. In the northern

part of the U.S. particularly, cellars are usually considered necessary, yet many houses built without them are warm and dry. The reason lies simply in sound, intelligent construction.

Cellar walls must act as retaining walls for earth and water. Foundations which only transmit the load of the superstructure to the earth below need not be as thick nor as deep, and waterproofing is not needed. Excavation, costly where rock or heavy clay is encountered, is, of course, very much less. However, if the cellar is eliminated, sufficient space must be provided above ground for heating, laundry equipment, and storage.

FOUNDATIONS

Foundations for small houses are often made strong enough to carry the load of a three or four-story apartment house. With improvements in the technology of concrete such foundations are unnecessarily heavy and costly for the light load of the one and two-story house. Hollow concrete block walls are less costly than pouredin-place concrete (see page 236). Footings may be designed for the actual load they are to carry. (See Arch.

FORUM, Dec. 1935, pp. 536-7).

Where there is no cellar, a pier and girder foundation can be used. This type of foundation may have masonry or concrete piers and wood, steel or reenforced concrete girders. If the sub-floor is a concrete slab on a cinder or gravel fill resting directly on the ground, the girders may be lighter because of the elimination of the first floor load. By making the concrete slab a reenforced matt designed for beam action under the walls, the piers and girders may be eliminated also. These methods do away with the need for heavy foundation walls extending below the frost line. The concrete slab may be waterproofed against moisture and insulated against cold, and will be proof against fire, termites and rot.

FRAMING

If all dimensions are worked out to take the fullest advantage of stock sizes of framing lumber, waste and

carpentry labor will be greatly reduced.

The size of floor beams is usually figured for the load the beams are intended to carry; yet engineering design is seldom applied to wood frame walls. Compare the strength and lightness of airplane construction with the wall of 2 x 4 studs spaced 16 in. on center. Studs can be spaced farther apart if proper bracing is provided, nor is the same framing needed for non-bearing partitions. For closet partitions, heavy sheathing may serve the purpose of both framing and finish.

Roofs may be designed to avoid complicated framing. Ridges and valleys add to the expense of each operation in building a roof. With wood framing, the cheapest roof to build is probably one with a very low pitch. The flat roof requires a more expensive finish, more insulation, and eliminates the storage space which may be

had under the pitched roof.

LABOR AND MATERIAL SIMPLIFICATION

In order to design for economy, the architect should consider local labor practices, the kinds of material

available locally and their relative costs. It is usually economical to buy small amounts of material locally but, where the quantity is fairly large and service is not a factor, materials purchased from large dealers may be cheaper. Sizes and designs which are carried in stock will, of course, be materially cheaper than those which are special or seldom used. Stock materials usually meet reasonable requirements.

Trim serves to cover rough lumber and construction joints where changes of material occur. Common practice today calls for much simpler trim than was formerly used. Base, door and window frames, and construction joints can be so made that little additional trim is needed. Plain base, door and window frames can be set on the plaster line and thus serve as screeds for the plaster, eliminating grounds used for this purpose. The exposed woodwork can be oiled or covered with paper to protect it from damage by wet plaster. A further step in cost saving is to frame door openings with studs of the size and wood desired for the finished frames and hang the doors directly to these studs.

Most equipment today is enclosed in attractive metal jackets as it is intended to be free standing. With efficiently planned layouts, much of this jacketing is hidden

and could be eliminated.

It is uneconomical to bring mechanics to the job for small amounts of work. It is cheaper to substitute materials or equipment which can be installed by workmen

who will be doing other work on the job.

Practices unfamiliar to local labor or contrary to their customs often prove costly. Shop labor is usually paid at a lower wage rate and the men work under conditions more conducive to efficiency than field labor. For these reasons, work done in the shop which will save time in field installation usually results in lower cost.

COST REDUCTION THROUGH PLANNED QUANTITY BUILDING

Planned quantity building opens up further possibilities for cost reduction. Most of the quantity building of houses is done by the speculative or operative builder. While a great deal of justifiable criticism has been directed at the often atrocious design and inferior quality of his product, these faults are not inherent in the low cost quantity built house. It is by enlarging on certain methods of the speculative builder that well designed, well built, low cost houses can be constructed.

How much is saved by building in quantity, no one really knows. Several builders who operate on a large scale were asked what savings could be made by building a number of houses instead of one. They frankly admitted they did not know but hazarded guesses:

5	houses		i	٠	-					į.	2	¥				. 5	per	cent	
10	houses	· ·			,								*			.10	per	cent	
	houses																		
	houses												66	U	V	ho	kno	ws ? "	

One said fifty houses would cost more per house than one or two.

As a matter of fact, very few builders really operate on a large scale even in good times. According to the Bureau of Census, there were in the U.S. in 1929, 10,881 building contractors who did a business of over \$25,000 a year. Of these

27	per	cent	did	less	than	\$	50,000	a	year
55	* **	**	22	**	**		100,000	99	99
76	**	22	22	"	22		200,000	**	22
96	22	**	22	77	"	1	,000,000	99	77

Of these building contractors 2,455 were engaged in residential building and their average volume for 1929 was \$100,000. Only 750 were classed as speculative or operative builders and their average volume was \$200,000, but this figure included building of all kinds. Since the average cost of houses built in that year was over \$4,000, there could not have been much quantity building.

HOW THE SPECULATIVE BUILDER WORKS

The speculative builder is the only quantity builder today yet construction is just a side line with him. His main purpose is to sell land and he finds it easier to sell with houses on it. He depends for purchasers upon a fickle public whose group ideas on the kind of a house and the location they want are continually changing. Without advance orders or enough capital to carry a number of houses on hand, he must sell as rapidly as he builds. Since he may want to change style, finish, equipment, or location, or even stop building to let sales catch up with production, he dare not contract in advance for large amounts of materials and equipment nor employ a steady labor force. Instead, he depends largely upon a wasteful subcontracting system. He is, therefore, not engaged in planned quantity production. Nevertheless, he is able to build for less than the general contractor. The President's Conference on Home Building and Home Ownership (1932) estimated that construction costs of the speculative builder were 20 to 25 per cent lower. The answer is that the quantity speculative builder depends mainly upon driving bargains for his lower costs.

Where possible, he buys distressed stocks and shipments of materials with minor defects. He often arranges with large supply houses, or directly with the manufacturer, for materials and equipment to be supplied, through the local dealer or subcontractor, at special prices. The savings which he makes in these ways vary so much that no estimate can be made of them.

On labor, the large speculative builder saves in two ways: greater productivity and lower wages. He seldom uses union men or pays the prevailing wage rate. Men are more concerned with their average wage than their hourly rate. He gives them steadier work than they can ordinarily find, often a weekly wage. Anxious to hold these steadier jobs and more efficient as a result of repetition of work, they do more work per day and often forego additional pay for overtime. Farming out work to a man or group of men on a piece-work basis-so much per house for such things as framing, trimming, or setting tile-is common practice among speculative builders. This method invariably results in greater productivity per dollar spent. The builder is not concerned with how much work they do per hour. By these means, his labor costs are materially lower than those of the general contractor—often by 50 per cent. With labor on the usual residential work averaging 30 to 35 per cent of construction costs, his net saving through labor is therefore about 15 per cent. The speculative builder makes a further saving in supervision and office help. He, or his partner, usually supervises the construction work and as a rule he keeps fewer records. Unlike the general contractor he does not have to spend time looking for or figuring new jobs, since his jobs are less scattered, and less concerned with quality, his supervision can be less thorough.

WASTE IN BUILDING CONSTRUCTION

A committee of the Federated American Engineering Societies estimated that 53 per cent of the cost of construction is waste. They apportion the responsibility as follows:

Manager	ner	it													34%
Labor .											-				11%
Indirect															8%

A great deal of this waste could be eliminated. For instance, present practice in setting some windows requires the following job operations: setting the frame,

fitting and hanging the sash, glazing, weatherstripping, applying hardware, fitting and putting on the trim; each operation is done at a different time. The factory fabrication of such items as complete windows, stairs and piping assembly units and the greater standardization of materials and equipment would bring about a reduction in cost.

On the ordinary simple residence about fifteen different trades are employed and most of the skilled mechanics working in these trades also have helpers. Each trade has rigid rules about the work which it will do, does a comparatively small amount of work on each house, and does the work intermittently. A reduction in the number of trades would effect a more efficient use of labor.

The subcontracting system has been built up around the craft organization of the building trades (note that the word "trades" is plural, not singular when used with building). About 3 per cent of the cost of construction is spent on estimating, most of which is needless duplication by subcontractors. Probably between 10 and 15 per cent of construction cost goes to overhead and profit to subcontractors.

COST REDUCTION

Building corporations with ample capital who operate

on a basis of carefully planned, large scale, continuing construction should be able to make substantial reductions from present building costs by the following means:

1. Purchase of standardized materials and equipment at lower prices, through contracting for quantities so arranged for deliveries that fewer middlemen are needed, and the manufacturer is able to plan production.

2. More efficient use of labor at lower weekly wages, through construction planned to keep that labor working steadily on simple repetitive units involving less field fabrication.

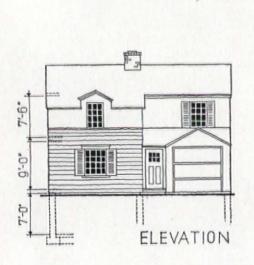
3. Reduction in subcontract costs through less competitive bidding and by employing more trades directly—possible when men can be employed steadily by builder.

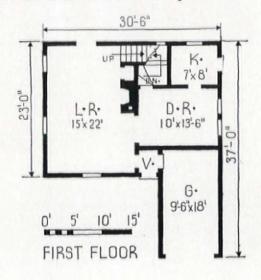
The development of factory fabricated construction (irrespective of the completely prefabricated house) for all parts of a house would undoubtedly materially increase these savings—to possibly 50 per cent of present construction costs. With any such reduced costs and with the architect doing his part in turning out attractively designed and efficiently planned houses, it should be possible to tap a market for new houses heretofore untouched.

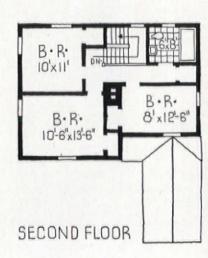
STUDY OF COST REDUCTION ON A TYPICAL \$5,000 HOUSE

HOUSE DESIGNED BY H. GILL, ARCHITECT
ESTIMATE PREPARED BY SHELDON D. WERNER, CONTRACTOR

To study the possibilities of cost reduction in a single house without essential changes in size, plan, accommodation, or quality, the house shown below has been used as a base. Built in the more expensive part of the New York suburban area, it would cost \$4,670, exclusive of architect's fee, landscaping, and utility connections. Its cost can be reduced by as much as \$434 through the alternates shown. The contractor's estimate is reproduced here in full. By substituting other prices the cost of the house and the alternates can be figured for any locality. The table on page 237 will give an indication of the cost of this house in the various parts of the country.







CONSTRUCTION OUTLINE

FOOTINGS, FOUNDATION WALLS & FLOORS ON GROUND-

poured concrete 1-3-5 mix. EXTERIOR WALLS—2 x 4 studs 16" o.c., $\frac{7}{8}$ " N. C. Pine t & g sheathing, building paper, 18"red cedar shingles 10" to the weather. ROOF—2 x 8 in. rafters 16" o.c., 1 x 2 in. spruce shingle lath $\frac{41}{2}$ " o.c. 16" red cedar shingles $\frac{41}{2}$ " to the weather.

sneathing, building paper, 10 red cedar siningles 10 to the weather. ROOF—2 x 8 in. rafters 16'' o.c., 1 x 2 in. spruce shingle lath $4\frac{1}{2}''$ o.c. 16'' red cedar shingles $4\frac{1}{2}''$ to the weather. CHIMNEY—common brick, fire brick for fireplace lining. WINDOWS—12 light, $1\frac{9}{6}''$ check rail sash, double hung. EXTERIOR DOORS— $1\frac{3}{4}''$ fir glazed, 2 panel.

INTERIOR DOORS—5 cross panel 13/6" fir.
INTERIOR TRIM—Whitewood flat trim for painting.
FLOOR FINISH—13/16 x 21/4 in. No. 2 red oak.
WALL FINISH—brown & white coat plaster on insulating lath.
PAINTING—lead & oil exterior, flat paint interior trim, cold water
paint plaster, minwax floors, enamel kitchen & bath complete.
PLUMBING—brass pipe or copper tubing, inexpensive fixtures,
HEATING—gravity warm air.

COST ESTIMATE

SUBDIVISION	QUANTITY	UNIT	TOTAL	PER CENT OF TOTAL
EXCAVATION	265 c.y.	\$.60	\$ 159	3.4
CONCRETE FOOTINGS	9 c.y.	10.00	90)	
CONCRETE FNDN. WALLS	896 s.f.	.48	430 628	13.4
CONCRETE FLOOR O. G.	719 s.f.	.15	108)	
CHIMNEY COMPLETE	387 c.f.	1.00	387	8.3
EXTERIOR WALLS	1831 s.f.	.23	421	9.0
ROOF	1060 s.f.	.23	244	5.2
FLOOR FRAMING	1725 s.f.	.16	276	5.9
PARTITIONS	138 I.f.	.90	124	2.6
OAK FLOORS	886 s.f.	.11	97	2.1
LATH & PLASTER	4296 s.f.	105	451	9.7
EXTERIOR OPENINGS			295	6.3
EXTERIOR TRIM			30	0.6
INTERIOR DOORS	15 pcs	13.00	195	4.2
INTERIOR TRIM-BASE	499 I.f.	.10	50	- 1.1
STAIRS COMPLETE			110	2.4
KITCHEN CABINETS			65	1.4
CLOSET FITTINGS	5 pcs.	3.00	15	0.3
LINOLEUM & FIR SUB FLOOR	118 s.f.	.35	41	0.9
SHEET METAL			40	0.9
HARDWARE			42	0.9
LIGHTING FIXTURES			40	0.9
BATH ACCESSORIES			30	0.7
PLUMBING			375	8.0
HEATING-WARM AIR			230	4.9
ELECTRIC			100	2.1
PAINTING			225	4.8
		TOTAL	\$4,610	100.0%

UNIT PRICES

CONC. WALLS 1 s.f. CONCR. 10" thick	.30
2 s.f. FORMS @ .09	.18
S.F. PRICE	.48
EXTERIOR WALLS SHINGLES 10" t.w05 + .03 FRAME & SHEATH, 2.2 B.f. @ .07	.08
S.F. PRICE	.23
ROOF SHINGLES .07 + .03 LATH .014 + .03 FRAMING 1.3 B.f. @ .07	.10 .04 .09
S.F. PRICE	.23
FLOOR FRAMING FRAME & SUB FL. 2.7 B.f. @ .06	.16
LATH & PLASTER INS. LATH LABOR " 2c PLASTER MAT. LAB.	.045 .015 .025 .020
S.F. PRICE	.105

NOTE: INSURANCE AND CONTRACTOR'S PROFIT IN-CLUDED IN ABOVE UNIT PRICES

ESTIMATE WORK SHEET

SPACE	DIMENSIONS	Floor Sq. Ft.		alls Sq. Ft.	Fl. Frame Sq. Ft.		0ak Floors	Linol.	EXTERIOR WALLS		
LIVING ROOM	15 x 22									s, f.	ALC: Y
minus	2-6 x 11-6	301	71	568	602	869	301		FRONT (30-6x17-4)-(12x2-6)-(8.3)	474	
DINING ROOM	10 x 13-6	135	47	376	270	511	135		REAR 30-6x17-4	528	
KITCHEN	7 x 8	56	30	240	112	296	100	56	R. SIDE 19-6x(17-4 + 5/2)	386	
VESTIBULE	3-6 x 4	14	15	120	28	134		14	" 17-6x8-6	149	
STAIRS-UP	3 x 8	24	8	64	20	64		14	" 3-6 x 6	21	
STAIRS-DOWN	3-6 x 5	17	14	112		04			L. SIDE 19-6x(17-4 + 5/2)	386	
CLOSET-L. R.	2-6 x 2	5	9	72	10	77	5		" 3-6x16	56	
BED ROOM 1	10-6 x 13-6	142	48	336	142	478	142		" 14x8-6	119	
BED ROOM 2	10 x 11	110	42	294	110	404	110		1440-0		
BED ROOM 3	8 x 12-6	100	41	287	100	387	100			2119	
BATH	6 x 8	48	28	196	48	244	100	48	The second second	2119	
HALL	19-6 x 3	59	36	252	59	311	59	118	Million and the second second second		
STAIRS-DOWN	6-6 x 6	39	16	112	39	151	29	110	DEDUCT OPENINGS		
CLOSET- 1	2 x 4	8	12	84	8	92	8	CONC.	SASH D.H. 8/8 3 pcs. 3-6x4-6	47	\$15 each \$4
CLOSET-2	3 x 3	9	12	84	9	93	9	SLAB.	" D.H. 6/6 8 pcs. 2-8x4-6	96	12 each 9
CLOSET-3	2 x 4	8	12	84	8	92	8	SLAB.	" D.H. 6/6 4 pcs. 2-4x3-6	33	11 each 4
CLOSET-HALL	3 x 3	9	12	84	9	93	9		DOORS ENTRANCE 3x7x3 s.f.	63	25 each 7.
GARAGE	9-6 x 18	171	46	322	171	22	9	171	" GARAGE 7x7x1 s.f.	49	35 each 3
CELLAR	28-6 x 21	1/1	40	222	1/1			171	A		-
minus	10 x 5	548						548	minus	288	
TOTALS	- Commence of the Commence of	1 2 2 2	499		1725	4296	886	719			
			455		1,25	4230	000	719		1831	\$29
EXCAVATION	c.f.			FO	OTINGS		c.f.		ROOF		s.f
34x22x7	5236			154	x2x2/3		205		(31x12x2)-(5x7-6)		70
20x4-6x7 42x3-6x3	630 441			4x8			32		16-6x4		6
FOOTINGS	237				7.77				5x3x2		
50x4x3	600						237	9 c.y.	(18x6-6x2) - (4x1/2x6-6)		22
	7144 265	c.y.							6x6		31
FOUNDATION WAL	LS s.f.			СН	IMNEY		c.f.				1060
103x7 CELLAR	721			GL CO. CO.	(2-6x17-4		237				
42x2-8 GARAGE	112				-6x15		150				
9x7 INTERIOR	63		*	482	UNID		150				
SX1 INIERION	0.5						007				
	896						387				

ALTERNATES WHICH REDUCE COST

COST REDUCTION .

FOUNDATIONS AND CELLAR	12" CONCRETE BLOCK INSTEAD OF 10" POURED CONCRET	WALLS:		V
TOTAL TITLE OF THE PRESENT	Deduct 896 s.f. of foundation wall @	. WALLS:	\$430 236	1
				\$194
	OMIT CELLAR, USE PIER AND BEAM FOUNDATION AND COFIRST FLOOR SLAB:	NCRETE		
	Heater and laundry room added to first floor as extension space under stairs. Gravity warm air becomes forced warm air heating system, additional cost because of saving in flues.			
	Deduct cost of cellar and first floor framing	27 36	\$824	
	944 s.f. forms	113 270	656	
				\$168
	OMIT CELLAR, USE REENFORCED CONCRETE MAT FOR FO AND FIRST FLOOR SLAB:	4		
	Heater and laundry room added to first floor as extension space under stairs. Gravity warm air becomes forced warm air heating system, additional cost because of saving in flues.			
	Deduct cost of cellar and first floor framing		\$824	
	12 c.y, cinder fill	36		
	21 c.y. concrete	210 160		
	2 oz. sheet copper dampproofing	18	634	\$190
STRUCTURAL FRAMING				9130
STRUCTURAL FRAMING	STUD SPACING—WALLS AND PARTITIONS 24" INSTEAD OF Deduct 374 Bd. ft. 2 x 4s	F 16":		\$26
				320
	BALLOON INSTEAD OF PLATFORM FRAMING: Deduct 290 Bd. ft. lumber			
				\$20
STAIRS	STRAIGHT RUN INSTEAD OF ANGLE TURN-DEDUCT:			
	If house were so designed			\$45
INTERIOR WALL FINISHES	INSTEAD OF 2 COAT WHITE FINISH PLASTER ON INSULAT	ING LATH		
	Kitchen and Bath remain with Plaster finish a. No. 2 Knotty White Pine Wall Finish 1 x 8 ship- lapped and V-jointed			
	Deduct 426 s.y. lath and plaster@ .95	\$405	\$405	
	Add 3,823 s.f. pine finish		325	
	b. 34" Fir Plywood Wall Finish with Puttied Joints			\$80
	Deduct plaster and lath		\$405 268	
	c. Sand Finish Plaster, 1 Coat, on Insulating Lath			\$137
	Deduct 426 s.y. at difference of \$.22 per s.y			\$94
FINISHED FLOOR	SINGLE 11/4" FLAT GRAIN FIR FLOORING INSTEAD OF PINE UNDERFLOOR AND NO. 2 RED OAK FINISHED FLOOR:			934
	Deduct 886 s.f. underflooring			
	.183		\$162	
	Add 885 s.f. fir finished floor	\$115 15	130	

NOTE: The above estimated by Sheldon D. Werner for the typical house shown on page 234.

CONSTRUCTION COST INDEX FOR 81 CITIES

The Federal Home Loan Bank Board is publishing an index of house construction costs which can be used as a guide to compare costs in different sections of the country. If 10 per cent is added to the estimated cost of our typical house to take care of architect's fee, utility service connections, equipment, or what you will, its cost will then be almost exactly that—\$5,143—given in the FHLB Review for White Plains, N. Y., the location for which the estimate was made. For probable cost in other locations, it is then only necessary to read directly from the published list of the FHLB for the cost of their standard house as determined by them in eighty-

one different cities.

Too much faith is not to be placed in the accuracy of this, or for that matter, any other index of construction cost. Bids on any one house will vary 10 per cent to 20 per cent. In the area surrounding any large city a change in location of 10 or 20 miles may cause a similar variation. The FHLB index does not take into account differences in quality and labor productivity which occur in different sections of the country. The FHLB Review itself states that these figures "are to be accepted cautiously... until the reporting system has had time to be perfected and possible errors largely eliminated."

STATE	COST	STATE	COST	STATE	COST	STATE	COST
ALABAMA		IOWA		MONTANA		PENNSYLVANIA	
BIRMINGHAM	\$5,456	DES MOINES	\$5,874	GREAT FALLS	\$6,779	HARRISBURG	\$5,583
MONTGOMERY	4,359					PHILADELPHIA	5,494
		KANSAS		NEBRASKA			
ARIZONA		WICHITA	5,386	OMAHA	5,487	RHODE ISLAND	
PHOENIX	6,113					PROVIDENCE	
		KENTUCKY		NEVADA			
ARKANSAS		ASHLAND	5,439	RENO	6,006	SOUTH CAROLINA	
FORT SMITH	4,764	COVINGTON	5,673			COLUMBIA	4,337
LITTLE ROCK	5,202	LEXINGTON	5,039	NEW HAMPSHIRE		SOUTH DAKOTA	
TEXARKANA	4,892	LOUISVILLE	5,484	MANCHESTER	5,380	SIOUX FALLS	5,751
		PADUCAH	5,170			SIUUX FALLS	5,751
CALIFORNIA			0,270	NEW JERSEY		TENNESSEE	
LOS ANGELES	5,177	LOUISIANA		ATLANTIC CITY	5,922	CHATTANOOGA	5,217
SAN DIEGO	5,520	NEW ORLEANS	5,328	CAMDEN	5,082		4,979
		NEW UNLEANS	5,326	NEWARK	5,709	KNOXVILLE MEMPHIS	
COLORADO							5,079
COLORADO SPRINGS	5,972	MAINE		NEW MEXICO		NASHVILLE	4,886
		PORTLAND	5,813	ALBUQUERQUE	6,067	TEXAS	
CONNECTICUT							E 050
HARTFORD	5,846	MARYLAND		NEW YORK		SAN ANTONIO	5,958
		BALTIMORE	5,028	ALBANY	5,340	UTAH	
DELAWARE		CUMBERLAND	6,033	BINGHAMTON	5,370	SALT LAKE CITY	5,980
WILMINGTON	5,360			BUFFALO	5,490	SALT LAKE CITY	5,500
		MASSACHUSETTS		SYRACUSE	5,500	VERMONT	
DISTRICT OF COLUMBIA		BOSTON	5,861	WHITE PLAINS	5,143	RUTLAND	5,507
WASHINGTON	4,977	SPRINGFIELD	5,963			NOTEAND	5,507
				NORTH CAROLINA		VIRGINIA	
FLORIDA		MICHIGAN		ASHEVILLE	4,960	RICHMOND	5,046
PENSACOLA	5,095	DETROIT	5,032	RALEIGH	5,056	ROANOKE	4,508
WEST PALM BEACH	5,911	DETROTT	0,002			HOANOKE	2,000
GEORGIA				NORTH DAKOTA		WASHINGTON	
ATLANTA	E 267	MINNESOTA		FARGO	5,606	SEATTLE	5,315
AILANIA	5,367	ST PAUL	5,330	MINOT	5,914		0,020
IDAHO						WEST VIRGINIA	
BOISE	6,777	MISSISSIPPI		OHIO		BUCKHANNON	5,214
	-11.11	HATTIESBURG	4,846	CLEVELAND	5,888	CHARLESTON	5,355
ILLINOIS		JACKSON	5,198	COLUMBUS	5,559	WHEELING	5,819
CHICAGO	6,361	MERIDIAN	5,272				-,
SPRINGFIELD	6,202			OKLAHOMA		WISCONSIN	
	,	MISSOURI		OKLAHOMA CITY	5,756	OSHKOSH	5,703
		10000111				44111111111	-11.00
INDIANA		KANSAS CITY	5.328				
INDIANA INDIANAPOLIS	5,889	KANSAS CITY SPRINGFIELD	5,328 5,808	OREGON		WYOMING	

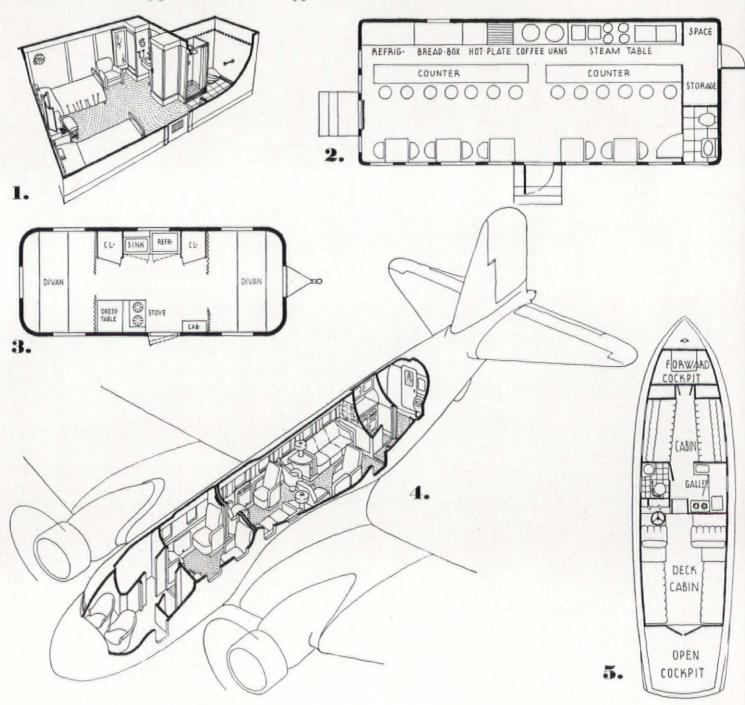
PLANNING FOR INTENSIVE USE OF SPACE

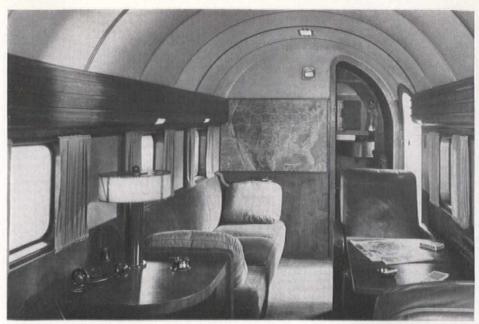
An examination, not of the small

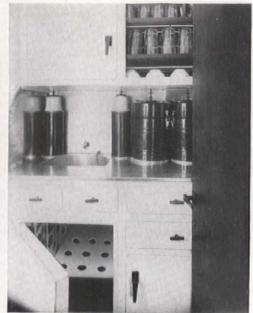
house, but into those related fields where the problem of space utilization occurs in its most acute form.

A roadside diner is not a small house; neither is a motor boat nor an airplane. These and similar units, however, have to meet one problem which every small house architect must face: the accommodation of a certain number of people in the smallest possible space; many of them show a remarkable degree of ingenuity. The small house designer could hardly use a boat's galley in a cottage and satisfy the housewife, but he can study such arrangements to obtain a fresh approach and to realize how greatly space can be compressed without an appreciable loss of comfort.

Compression of space is a necessary procedure in minimum house design. It should not be forgotten, however, that the more intensively space is used, the more it costs. The efficient plan, therefore, is not necessarily the smallest plan, and the acceptable result will inevitably be a compromise. The following examples of compact planning are not solutions; they are not a panacea for housing ailments; but to the architect they offer some interesting possibilities—to be applied with discretion.







4

I FIRST CLASS CABIN A third class cabin on a liner represents a practical minimum in sleeping accommodation. But even the more luxurious stateroom, such as the one illustrated, provides two closets, a lavatory, dressing table, two full-size beds, and a chair or two in an area about eleven feet square.

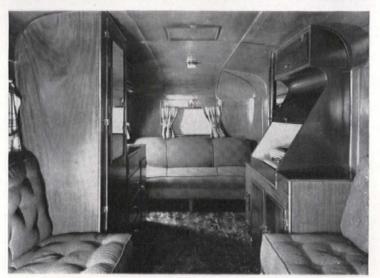
2 DINER The humble roadside diner provides ample cooking facilities for serving twenty or more people at a time in a space four feet wide, with a length that depends on the size of the car. It is one of the most efficient layouts ever devised. The average small house kitchen, designed with a similar regard for space, could be considerably reduced in size.

TRAILER The trailer is a house—with wheels for its foundation. A unit about 18 feet in length will sleep four persons, and contains storage and cooking equipment. Compression of space in these vehicles always results in the use of sleeping rooms for dining and living rooms during the day, and in the use of minimum size kitchens.

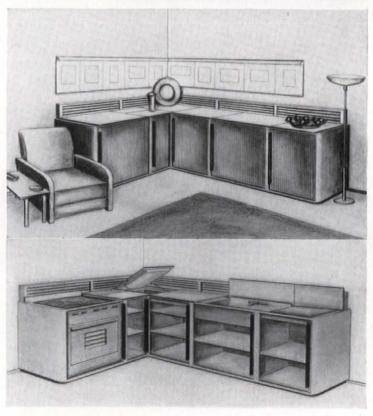
4 AIRPLANE The chief feature of interest in this Douglas plane interior, designed by Henry Dreyfuss, is the galley. Reduction of space in this direction can go no further. Tables built into the side walls and seats that become beds perform another function that may be considered in the minimum house: the possibility of using the same space for different activities at different times during the day.

5 MOTOR BOAT The small motor cruiser more nearly approaches the house than the preceding examples: it is designed to be lived in for reasonable periods of time, and must provide living, sleeping, and eating accommodations. The model illustrated is a 38-foot stock Elco cruiser, sleeping eight people. The galley, equipped with dresser, sink, stove, refrigerator, drawers, shelves, etc., takes up about sixteen square feet of space.

G KITCHEN This unusual unit, designed by Jacques Fernand Levy, is an attempt to design a kitchen, which, when not in use, appears as a part of the living room furniture. It consists of a series of units, covered with wood or some other material, which open to form a stove, sink, refrigerator, garbage disposal trap, and storage space. Louvers around the edge provide ventilation.

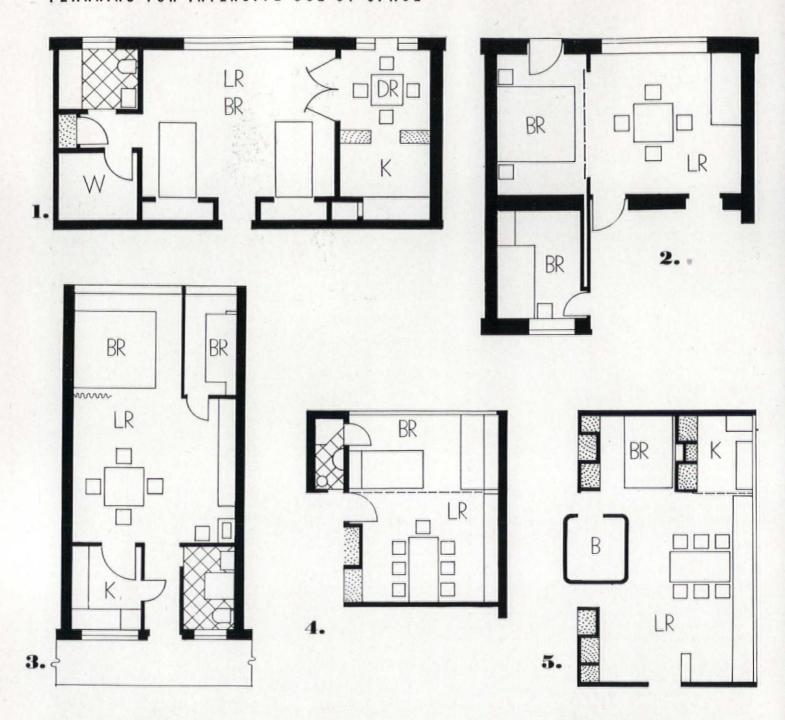


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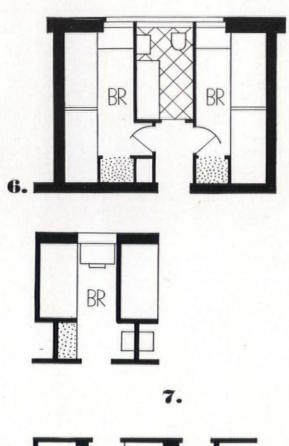
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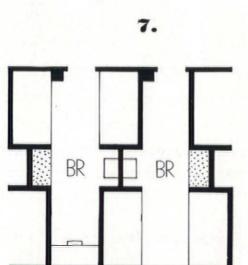


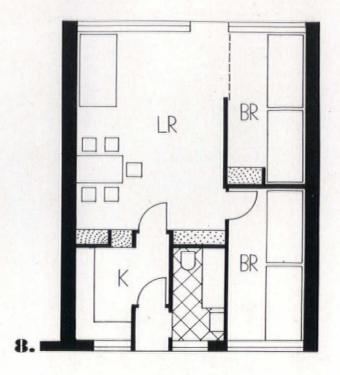
- 1. COMBINED LIVING ROOM AND BEDROOM. Wall beds turn the living room into a bedroom; necessary in apartments of this type, this arrangement might be adapted to small houses in certain cases. Dining and kitchen space are placed in one room, divided by low cupboards.
- 2. A bedroom taking up the smallest possible amount of room is obtained by the use of a sliding partition which can be pulled back at night.
- 3. A folding partition performs the same function as the sliding partition in the example above. The bed folds out of the way in the daytime. A single bedroom large enough for only a bed and small cupboard.
- 4. A similar arrangement, with folding beds.

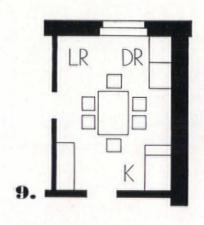
5. THREE ROOM APARTMENT. An ingenious plan which uses a single partition for kitchen and bedroom. At mealtimes the kitchen is opened and the bedroom closed. At other times the partition slides to close the kitchen, leaving the bedroom as an alcove off the living room.

APARTMENT AND HOTEL PRACTICE









- **6.** MINIMUM BEDROOMS. Four people, two closets, and a bath accommodated in a very small space. How widely such expedients would be adopted here depends entirely upon the compromise that can be made between the American standard of living and the American pocketbook.
- 7. MINIMUM BEDROOMS. A portion of a hotel plan showing possible arrangements for two adjoining bedrooms.
- 8. MINIMUM KITCHEN AND BEDROOMS. The practice of placing the beds end to end is a common one in Europe. While objections may be raised, it does result in a minimum size room. Closets, it will be noted, are less freely distributed than in U.S. houses.
- 9. COMBINED LIVING-DINING ROOM AND KITCHEN. A minimum plan, occasionally to be found in the small house. The practicability of such a scheme depends entirely upon the size of the room. The saving made in the elimination of partitions is worth considering.

... without benefit of Architect



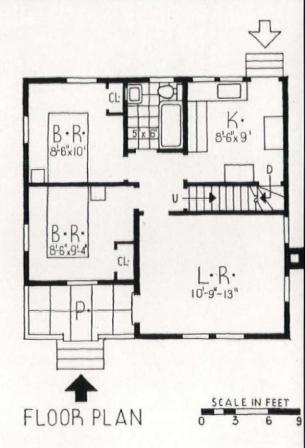


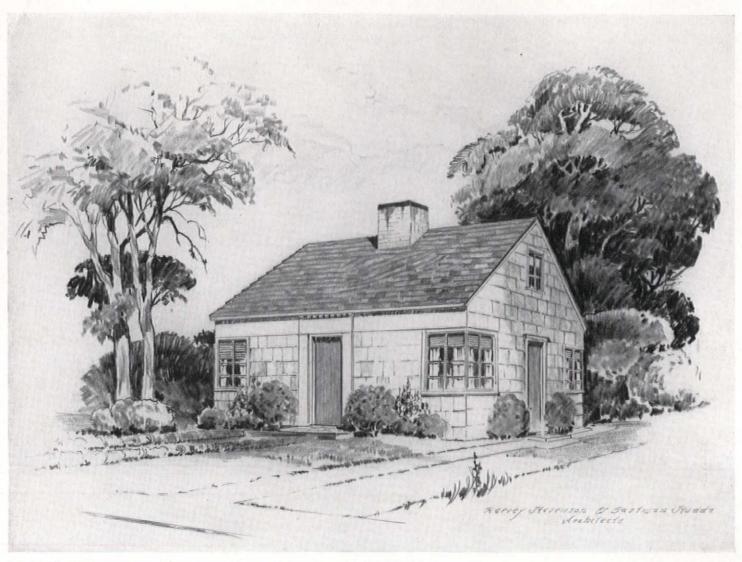
John Beinert Photos



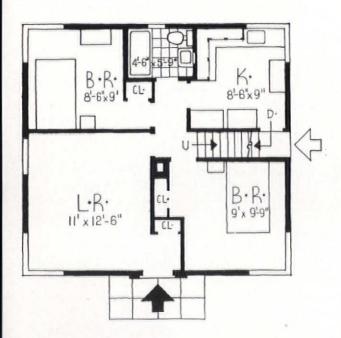


EVEN the smallest house can ill afford to be built without benefit of architect, a point sufficiently illustrated by this example, no better, no worse than thousands of its kind. With a small living room, two bedrooms, and a kitchen it comes close to the practical minimum for decent accommodation, yet one-third of America's families can afford nothing larger. There is no question about the immensity of the problem and no question about the inadequacy of the usual solution. The exterior of this house, viewed from any side, is not handsome: haphazard windows are accentuated by dark trim; a large dormer exists only as a meaningless protuberance, and the microscopic porch adds little to the amenities. These and other easily discoverable defects are perhaps minor: the house does provide shelter and its plan could be a great deal worse. The evil lies, not in this single example, but in the multiplication of this ugliness, in the building of whole developments whose original attractiveness and lack of planning result in the blighted quarters that no U.S. city has escaped.





HARVEY STEVENSON AND EASTMAN STUDDS, ARCHITECTS



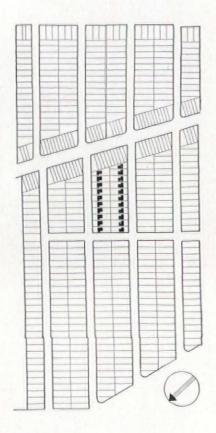
FLOOR PLAN

This study is one architect's solution, equal in size and accommodations to the house on the opposite page. While the landscaping gives it a certain initial advantage, a few trees and shrubs are not too much to hope for, and the house itself, still in the minimum class, is one in which self-respecting, intelligent people could live. Obviously corner windows and a center chimney are not the only answer: an equally successful design could have been produced with the elements of the contractor-designed dwelling; the superiority of this solution lies in its acceptance of the fact that simplicity and good proportions are the two indispensables in small house design, without which only caricature can result. The plan likewise shows improvement: the side entrance opens on the stair hall, leaving more work space in the kitchen, closets are placed so that they do not break up the rooms, the unsightly, inadequate porch has been eliminated, and walls allow better arrangement of furniture. Good planning and design do not raise house costs, do, more often, produce savings.

COMMUNITY PATTERNS



RADIANT VALLEY, U.S.A.



A CROONER, an orchestra popular with debutantes and a price-tag of \$7,990 were the major inducements used to sell houses in Radiant Valley in 1929. Customers drove the one hour from the Big City in unprecedented numbers. Salesmen showed the five-room house in person, pointing with pride to lavender bathrooms, romantic breakfast nooks, and the phantom of rambler roses. Prospects for the five-room bungalow were merely given direction and Godspeed. In twenty fast-speiling months the developer sold 1,000 houses. Then he left.

The true worth of the township of Radiant Valley, Inc. is not to be appraised at a glance; you must live there a while first. One day you will draw aside the stiff-starched dimity curtains and realize for the first time that every house on your block abutts on the identical building line. One night you will remark all unconsciously to yourself that the neighbors are having corned beef and cabbage for the second time in a week. And that their conversation is rather dull. Radiant Valley lots run 40×55 ft.

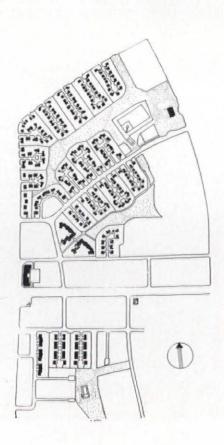
(Continued on page 246)



RADBURN, N. J. CLARENCE S. STEIN, HENRY WRIGHT, ARCHITECTS; FREDERICK L. ACKERMAN, PLANNER; MARJORIE S. CAUTLEY, LANDSCAPE ARCHITECT

Radburn, New Jersey, in the words of Critic Lewis Mumford, is "a demonstration of the possibilities of modern housing when the community rather than the individual dwelling is taken as the unit of design." Located less than an hour from Manhattan, it lies on one corner of 1,300 rolling and wooded acres owned by the City Housing Corporation, owners, builders, and agents for the community. The 300-odd houses of Radburn today occupy less than 150 acres. The unoccupied 1,150 are a token of a boom-time exuberance when the Corporation bit off more than it could sell. They lie there today, fallow and tax-eating. It is largely on their account that City Housing Corporation is today going through reorganization.

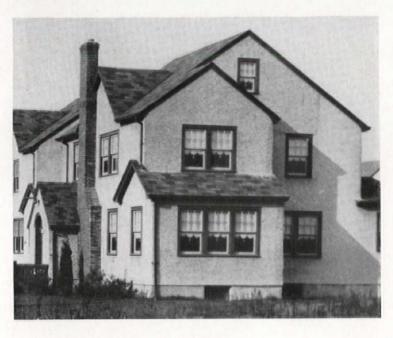
In chaste brochures, Radburn advertised houses and lots for sale in 1928 at prices starting at \$7,400. The (Continued on page 247)



RADIANT VALLEY, U. S. A.







If you come from the same neat, oppressive flats that used to hold most of the neighbors, there is one omission in Radiant Valley you will not notice. Radiant Valley has a school, a string of stores, a cinema not so far away. But nobody thought to give it any focal point, any community center nearer than the hofbraus and pool-rooms of the metropolis.

The man said \$7,990. On the special easy payment plan this figured out at a down payment of \$800 and a monthly payment of \$57.00. On paper it looked like this:

Cash	. \$	800.00
Interest on \$7,190		35.95
Fire Insurance on \$8,000		1.05
Payment to Reduce Mortgage		20.00
Total Monthly Outlay	.\$	57.00
You SAVE Each Month		20.00
Monthly Charges	.\$	37.00

But then you found that there was a special assessment for streets, utilities and lighting to pay. That amounted to \$500, amortized over ten years at 8 per cent. Then, after 1930, there was the tidy amount of \$199 in taxes to be met every year. The yearly finance plan which you actually undertook was this:

Interest on \$5,000 first mortgage at 6 per cent	\$300.00
Interest on \$2,190 second mortgage at	
6 per cent	131.40
Amortization at \$20 per month	240.00
Taxes	
Fire insurance	
	-
TOTAL	\$883.00

Your monthly charges thus became \$73.58 instead of the advertised \$57—and you hadn't even met your special assessment of \$500 yet. Suppose your rich uncle died and left you this \$500 in his will. Then you could pay off the second mortgage in nine years. Your annual interest charges would then drop to \$177.60—if indeed you could have found a 21-year first mortgage. But amortizing at the advertised rate of \$20 a month it will still take you 30 years and \$22,450, including ("just like rent") taxes and insurance to own the place. By then it probably won't be standing.

The developer cleared out in 1931. Second mortgages were beginning to look more and more like paper and less and less like investments: the salesmen had made the fatal mistake of talking cake to breadwinners. Finally a large batch of the second mortgages were sold for ten cents on the dollar and by 1933 better than 30 per cent

of the homes were foreclosed.

Today you can buy the famed \$7,990 houses in Radiant Valley—repossessed—for between \$4,500 and \$6,000. The trees are brave but thin. Slatternly lean-tos have crept into the backyards. Through thick new plaster on the walls you can catch the dark confluence of cracks. The toilets all suffer from a mysterious ailment: they slope to one side. But from the outside the houses still look like home. They must, because sales in Radiant Valley are up again. Just now the local salesman is the agent for no less than seven Big City banks.

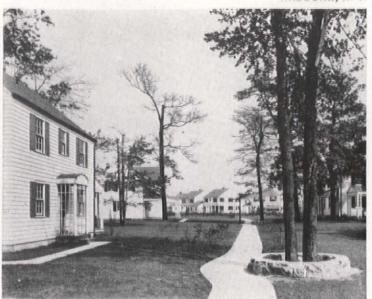
typical six-room house was priced at \$8,900, with monthly payments figured at \$64.45. The price and its financing were bona fide; there was not another cent to pay in taxes, insurance, "special assessments," or carrying charges. The down payment was relatively high: \$1,335. Up through 1929 City Housing threw in with the sale a special repurchasing agreement whereby the home buyer might retire from his mortgage obligations without losing the value of his equity in the house.

Value for the money at Radburn is high. Besides a six-room house your \$8,900 fetched a garage, concrete walks, water, a complete park and playground system, and landscaping that reminds you of parks and not of sticks in the sand. It gave your acres a caretaker in the form of the Radburn Association, and it gave your house individuality with cul-de-sac streets. But more than all that, it gave you and your neighbors continuing attention in an integrated community.

As a real estate development, Radburn cannot yet be called any sort of success. It carries far too much land on its books. Its present utility installation can care for more than twice the houses now in Radburn. And after all the shouting had died Radburn had sold only 317 houses. Furthermore, of these, 268, or better than 80 per cent were "repossessed" at one time or another. But notice that the home owner is much less loath to have his house repossessed—regaining his equity—than he is to have it foreclosed. Today all but twelve of Radburn's 317 houses are again occupied. Some of them, after repossession, have been merely leased out, not sold. Thanks to the income from rentals, interest on first and second mortgages on all houses is being met.

From the point of view of the home owner, Radburn is a very nice place. He got a fine bargain and a repurchase agreement. He could not lose. But to the developer and the architect Radburn presents a somewhat uncomfortable anomaly. Radburn has apparently failed to justify the theory so dear to the sociologist that whatever is good is also profitable. Radburn, to date, is definitely not in the black. Why, then, from a purely commercial point of view, plan your community?

The answer has at no time been more obvious than it is today. Radburn eight years after is vastly more significant than it was in those first fine days when it emerged spotless and pure from the blueprints. Today it begins to show the intrinsic commercial values of intelligent planning. Years bring rust and the sagging roof line, withering shrubs and cracking walls to the Radiant Valleys. To Radburn it brings slightly higher upkeep. But it also brings flowering parks, well-groomed homes, and good houses for the money. The process is slow, but it shows. Today it takes a buyer both hardy and foolish to be beguiled by a cube of wood set in a gridiron hung with theatrical leaves. But in Radburn you can find the same virtues it boasted seven years ago. This is good news to the home owner, But to the planner of the community it is more than news. It is justification of the most cherished kind.







Heinrichs Photos

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THE ARCHITECT

AND THE

\$5,000 HOUSE

A NATIONAL DEMONSTRATION OF NEW SMALL HOUSES DESIGNED BY ARCHITECTS

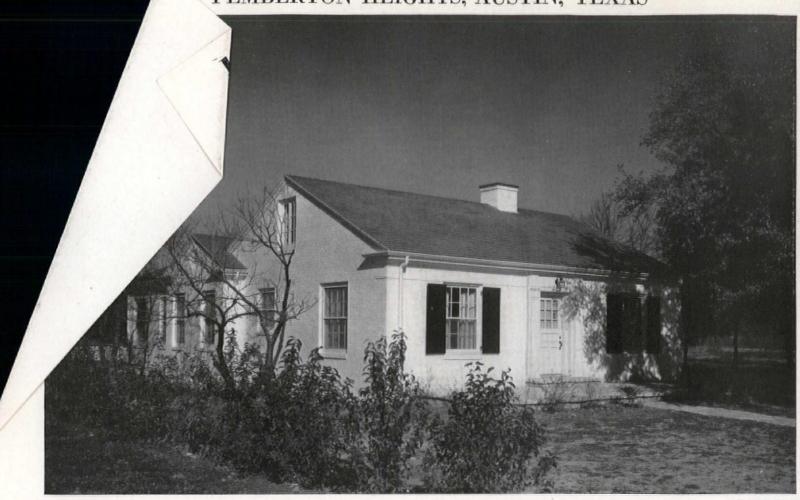
PEOPLE take it for granted that architects do not design small, inexpensive houses. And they take it for granted that architects do not want to. And most of all they take it for granted that it is not necessary to have an architect for such a house. This issue of The Architectural Forum—particularly the pages which follow—demonstrates the fallacy of those assumptions. Every house presented here cost \$5,000 or less. Every house presented here was designed by an architect; some for individual clients whose requirements were known, others for sale to unknown buyers whose requirements had to be averaged. The Architectural Forum counts it a privilege to offer for the first time a conclusive demonstration of the fact that the small house, no less than the soaring skyscraper, is a better building—better to live in, better to look at, better built, better to hold and better to sell—with benefit of architect.

NOTE: \$5,000 spent for a house in Portland, Maine will not produce the same house as \$5,000 spent for a house in Portland, Oregon. For an indication of geographic cost variables see page 237.

For purposes of comparison all floor plans are reproduced at the same scale.

APRIL · 1936

T PEMBERTON HEIGHTS, AUSTIN, TEXAS

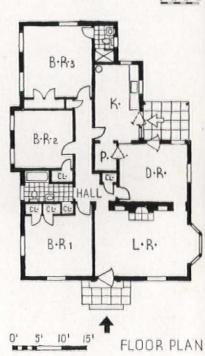


University Photos

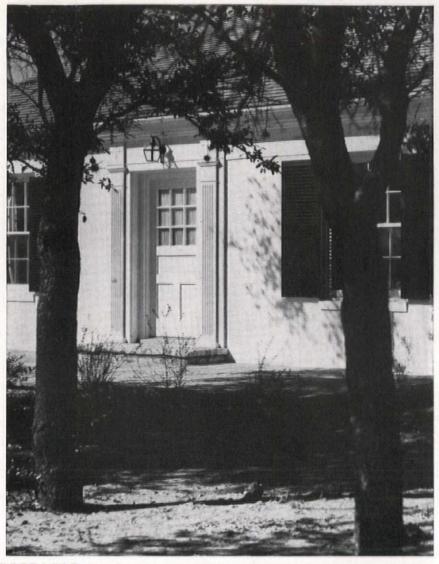


PROBLEM: House designed for sale.

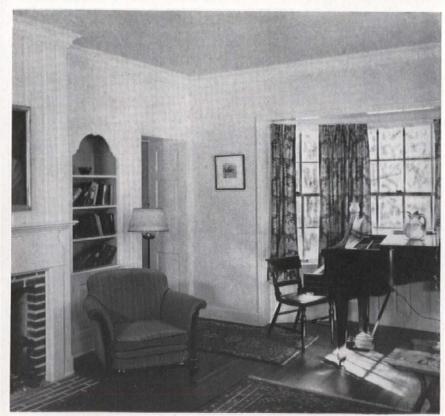
Designed as a demonstration house under the FHA program, this home was erected in Pemberton Heights, a residential section of Austin, Texas. Brick walls, painted white to match the exterior woodwork, repel the sun's rays. Blinds on the front windows dress up the facade. The plan is simple and compact. All three bedrooms are located on the southern side, leaving the cooler exposure for the living and dining rooms. To make room for the corridor connecting the bedrooms, without loss of area to the middle bedroom, the exterior wall at this point has been jogged out the width of the corridor. Built-in shelves and cabinets save space. The unattached garage is placed slightly to the side and rear of the house, with access from the kitchen. Cost: \$4,960. Cubage: 22,862 at about 22 cents.



H. F. KUEHNE, ARCHITECT



ENTRANCE



LIVING ROOM

CONSTRUCTION OUTLINE

Footings, continuous and piers concrete. Walls-8 in. brick up to level of floor joists. STRUCTURE

Exterior walls-4 in. common brick veneer anchored to wood sheathing; 15 lb. felt applied as building paper between brick and No. 3, 1 x 12 in. shiplap sheathing applied horizontally to 2 x 4 in. studs, 24 in. o.c. Interior wall surface is finished with paper applied to canvas on No. 2, 1 x 6 in. center match sheathing. Interior partitions-2 x 4 in. studs and 1 x 6 in. No. 2 center match on each side, finished like outside walls. Floor construction—2 x 8 in. No. 1 yellow pine Joists, 16 in. o.c. bridged; No. 3 shiplap sub-floors, 2 x 6 in. Joists for attic floor, sheathing and canvas for ceiling. ROOF

Construction-2 x 4 in. rafters trussed to ceiling Joists below. Finish-18 in. No. 1 Perfection edge grain red cedar shingles laid 51/2 in. to the weather on 1 x G in. shingle ribs, 11 in. o.c.

CHIMNEY

Common brick. Lining-terra cotta. Fireplace-damper, H. W. Covert Co.

SHEET METAL WORK

Flashing, gutters, leaders-28 gauge galvanized iron. INSULATION

None.

WINDOWS

Sash-double hung, multi-light. Frame-white pine, galvanized ball-bearing pulleys, Samson spot cord. Glass—quality B, single strength. Screens—white pine frame with pearl wire screen. Blinds—white pine.

Living room, bedrooms and halls-select beech, waxed. Kitchen—1 x 4 in. No. 1 pine, inlaid linoleum. Bath-rooms—one tile and one like kitchen. Porches—limestone flagstone.

WALL COVERINGS

All rooms wall papered. Kitchen-paper with Masonite Temprtile wainscot, Bathrooms—tile shower walls, Keene's cement wainscot. Other portion of walls papered.

WOODWORK

Trim-molded white pine base and casing trim. Shelving and cabinets-yellow pine, cabinets special built to detail B & B yellow pine, paneling, yellow pine. Doors, interior—6 panel, 1% in. white pine. Doors, exterior-134 in. special white pine. Garage doorsbuilt up of No. 1 select yellow pine.

HARDWARE

Interior-Colonial type, bronze, bit-key type locks. Exterior-bronze, Yale cylinder.

PAINTING

Interior: Walls-wainscot, in kitchen and bath 4 coats enamel. Floors-machine sanded, filled, given 2 coats varnish and waxed. Trim and other interior woodworkbaths and kitchen 4 coats gloss enamel, 3 coats lead and zinc paint Exterior: Walls-brick veneer, 2 coats of Bondex, Reardon Co. Roof-2 coats Cabot's shingle stain.

ELECTRICAL INSTALLATION

Wiring system—2 wire Romex flex-loom complete with meter loop, meter, fuse box, radio plugs and iron outlets. Switches-flush, toggle, single pole, Bakelite face plate in color to match woodwork.

KITCHEN EQUIPMENT

Stove—piped for gas stove. Refrigerator—piped for gas refrigerator and wired for electric refrigerator. Sink two compartment sink with two duo-strainers, Kohler Co. Cabinet-tile and linoleum covered work top.

BATHROOM EQUIPMENT

Lavatory—Hudson regular enamel, wall hung. Tub— Metropolitan white enamel recess bath. Toilet—Reverse trap bolted type closet combination. Shower-Tipton chromium plated concealed two valve type with self cleansing head, all fixtures by Kohler Co. Cabinet special medicine cabinet, steel copper back, Venetian type mirror on door.

PLUMBING

Pipes-cast iron and galvanized steel.

HEATING

Gas unit heaters.

2. HOUSE FOR MRS. THOMAS TOWLES, UNIVERSITY,

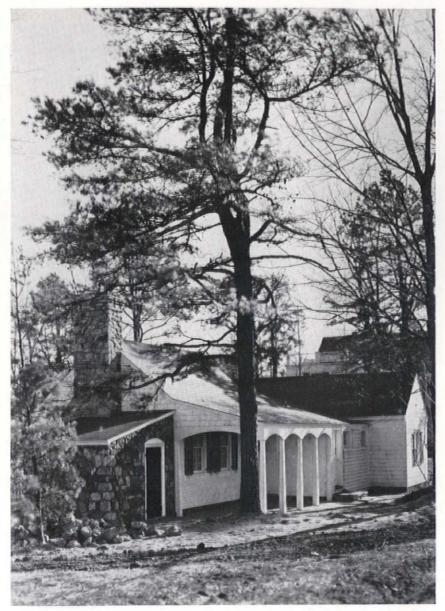


FRONT

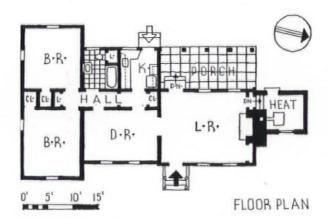
PROBLEM: Colonial House for a family of two. Automatic mechanical equipment mandatory because husband's profession requires his absence from the city at frequent intervals. Lot size 60 x 185 ft.

The local building tradition is strong in this section of the country, and the house was designed to conform with it. While it is rather broken up for so small a house, its parts are in good scale and enrichment is confined to small areas. The use of fieldstone for chimney and heater room is practical, and attractive in combination with wood shingles. The rear of the house is most successful, with its old-fashioned porch and large expanse of gently sloping roof. Cost: \$4,955. Cubage: 14,637 at about 34 cents.

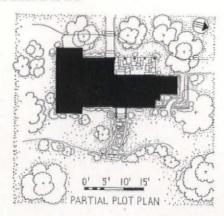
CHARLOTTESVILLE, VA., MILTON L. GRIGG, ARCHITECT



REAR



PLAN: Compactly laid out. Unusual use of dining room as circulation between living room and bedrooms and bath. Incorporation of dining room and living room might have left more space for storage, closets, etc.



CONSTRUCTION OUTLINE

FOUNDATION

Walls-continuous, local field stone.

STRUCTURE

Exterior walls--redwood shingles, 7/8 in. sheathing, 2 x 4 in. studs, Celotex lath and plaster. Interior par titions— 2×4 in. studs, Red Top rock lath and sand finish plaster, U. S. Gypsum Co., Keene's cement in bath and kitchen, Best Bros. Floor construction— 2 x 10 in. Joists, sub-floor, ceiling 2 x 8 in, joists, rock lath and plaster.

ROOF

Construction—2 x 8 in. rafters, 30 lb. felt and sheathing. Finish—Flintkote tapered strips composition shingles.

CHIMNEY

Field stone, Lining-terra cotta, Fireplace-oversize hand made brick, Old Virginia Brick Co., damper specially designed.

SHEET METAL WORK

Flashing-Armco iron.

INSULATION

Celotex lath on outside walls and all ceilings. Attic floor-rock lath. Weatherstripping-Monarch Metal Weatherstrip Corp.

WINDOWS

Sash-redwood, double hung except in kitchen and bath which are casements. Frame-yellow pine. Glassquality A, double strength, Pittsburgh Plate Glass Co. Screens-bronze in redwood frames, sliding. Blindsstock louvered.

FLOORS

Living room, bedrooms and halls-21/4 in. red oak, Barnes Lumber Co., Inc. Kitchen and bath-21/4 in. fir covered with linoleum, Armstrong Cork Products Co. Porches-flagstone, local quarry.

WOODWORK

Paneling in living room, redwood. Trim-redwood, special detail. Shelving and cabinets-yellow pine and fir plywood, special design. Doors, interior and exteriorredwood, special design.

HARDWARE

Hand wrought iron, special, Reading Iron Co.

PAINTING

Interior: Paneling-filled and waxed. Walls and ceilings—Farbo cold water paint, Farboil Paint Co. Floors filled, stained and waxed. Trim and sash-Wallhide, Pittsburgh Plate Glass Co. Exterior: Shingles—Safety White whitewash, all other surfaces, trim, etc., Double White, Samuel Cabot Co.

ELECTRICAL INSTALLATION

Wiring system—BX cable, General Electric Co. Switches—General Electric Co. Fixtures—special, Ritchie Electric Co.

KITCHEN EQUIPMENT

Stove-Standard Electric Stove Co., Toledo, O. Refrigerator-Frigidaire. Sink-Standard Sanitary Mfg. Co. Cabinet—wood, special design. BATHROOM EQUIPMENT

All fixtures by Standard Sanitary Mfg. Co.

PLUMBING

Pipes-Glaymorgan cast iron. Water supply-wrought iron, Reading Iron Co.

HEATING

Hot water with pressure pump. Boiler-tubular, American Radiator Co. with Timken oil burner, Radiator-Corto, American Radiator Co. Thermostat-Timken Silent Automatic Co. Hot water heater-summer and winter hook-up on oil burner.

3. HOUSE FOR W. V. KING, CONVENT, NEW JERSEY



No small factor in keeping down the final cost of this small house was the architect's choice of Homasote building board for both the exterior and the interior walls. In this house, the 8 x 14 ft. boards were used at their full height, 1 in. wood trim being added to cover the joint. The proportionment of window space has been carefully studied with excellent results. The wide overhang of the roof is necessary with so much glass area to protect in the extreme weather. The interiors, thought out in terms of large, flat areas, are simple and restrained. The fireplace, a portion of which is seen in the lower photograph, is particularly well done. In plan, much space has been saved by using closets to eliminate partitions, as shown between the master's and the children's rooms. Provision has been made for laundry and storage in the basement. Cost: \$4,400. Cubage: 20,430 at about a little over 21½ cents.

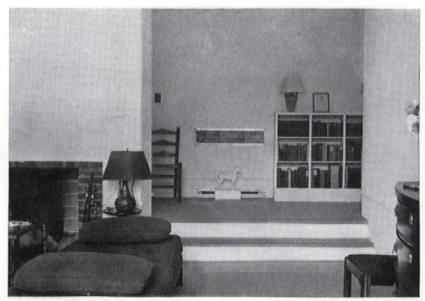
DESIGNED BY JAN RUHTENBERG



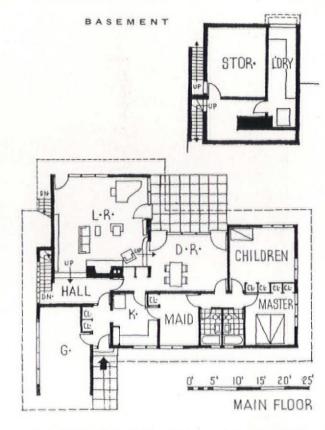
TERRACE



WINTER



LIVING ROOM



CONSTRUCTION OUTLINE

FOUNDATION

Basement-2 walls existing. Footings-concrete blocks. Cellar floor-existing concrete.

STRUCTURE

Exterior walls-2 x 4 in. wood frame, 8 x 14 ft. Homasote building board outside and inside, Agasote Millboard Co., Trenton, N. J. Interior partitions—same as exterior walls. Floor construction—living room, existing concrete, balance wood. Ceilings-Homasote nailed to underside of beams.

ROOF

Construction-wood. Finish-1 layer of prepared asphalt roofing.

CHIMNEY

Fire brick

INSULATION

Homasote building board, airspace between roof and ceiling joists.

Sash-wood casements to detail, some fixed. Glassquality B, double thick. Screens—galvanized iron mesh, wooden frames.

FLOORS

Living room—cement. Bedrooms and halls—wood. Covered with straw matting. Kitchen—wood. Bathrooms-concrete, painted.

WOODWORK

Trim-pine. Closets-standard sized units of wood frames, covered on both sides with Masonite, closets are built in between rooms eliminating partitions. Doors-flush, special made.

PAINTING

Interior: walls and ceilings-cold water paint. Trim and sash-3 coats oil paint. Exterior: walls-plastic waterproof paint.

ELECTRICAL INSTALLATION

Wiring system-BX cable. Switches-toggle, Pass & Seymour.

KITCHEN EQUIPMENT
Stove—gas, Tappan Stove Co. Refrigerator—General Electric. Sink-Standard Sanitary Mfg. Co. Cabinetwood, special made.

BATHROOM EQUIPMENT

Fixtures-Standard Sanitary Mfg. Co.

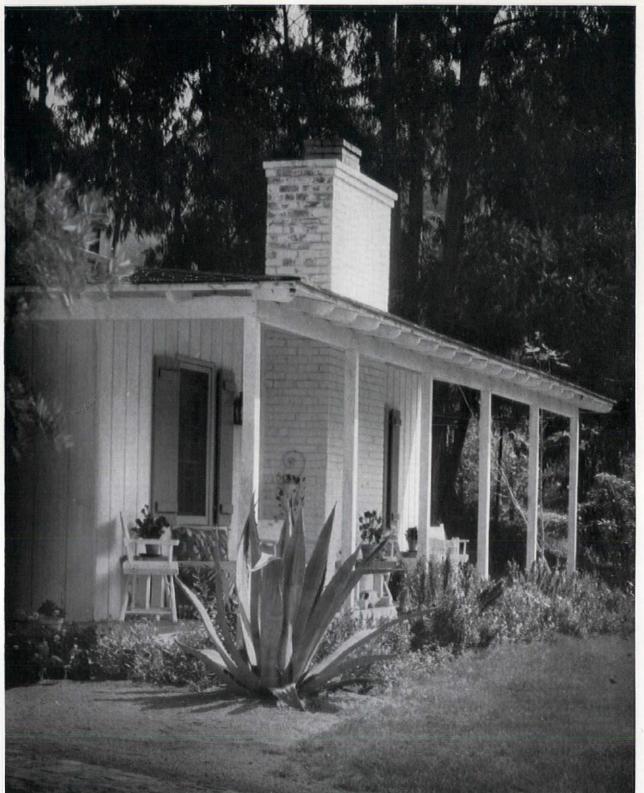
PLUMBING

Pipes-galvanized iron throughout. Septic tank.

HEATING

Two pipe steam. Boiler-oil fired, American Radiator Co. Radiators-American Radiator Co. Thermostat-Minneapolis-Honeywell Regulator Co. Hot water heater -connected with the boiler.

4. HOUSE FOR KUBEC GLASMON, BEVERLY HILLS, CALIF.

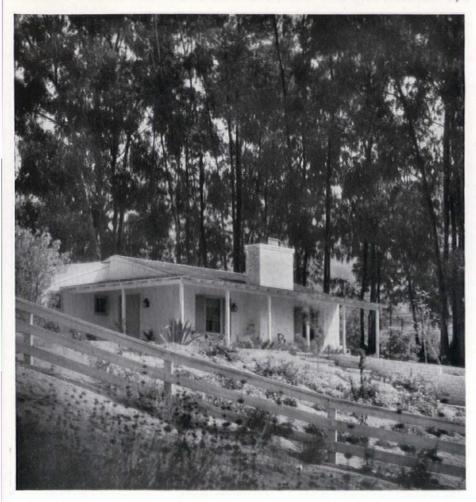


Miles Berne Photos

PROBLEM: A California ranch type of retreat for a Hollywood scenario writer. To have provision for butler and occasional guests.

Choosing the site well in the rear of the three-acre lot, the architects designed a low rambling house of simple frame construction. In their desire to have the house fit its rustic setting, the designers refrained from elaboration of detail. The walls are of vertical wood boards, the chimney of common brick painted to match the boards. The window shutters are distinctive in their simplicity. The center of interest is the large chimney which completely dominates the facade. To avoid minor complications of design, the architects put the main entrance in a subordinate wall. Cost: \$4,550. Cubage: 15,180 at almost 30 cents.

HENRY CARLTON NEWTON & ROBERT DENNIS MURRAY. ARCHITECTS





PLAN: The plan is very unusual. The living room faces the front with the main entrance on the side. The living room also serves to connect the other parts of the house which have been completely cut in half by a patio. On the one side are the butler's and service departments, on the other, the owner's and guests' quarters. The garage is detached, having been built-at the owner's request-at the front of the property.

CONSTRUCTION OUTLINE

FOUNDATION

Walls-concrete. Waterproofing-Succonem, Super-Concrete Emulsions, Ltd., Los Angeles.

STRUCTURE

Exterior walls-frame construction, Douglas fir, vertical 1 x 12 in. diamond joint redwood siding. Interior partitions-wooden studs, wood lath, Eclipse plaster. Floor construction-wood.

Construction-wooden rafters, exposed boards, vertical grain Ponderosa pine. Finish-red cedar shingles. CHIMNEY

Common brick. Lining-terra cotta. Fireplace-damper, H. W. Covert Co.

SHEET METAL WORK

Galvanized iron, Armco Ace Sheet Metal Co., Los Angeles, Calif.

None.

WINDOWS

Sash-double hung California white pine, sills redwood. Frame—vertical grain, Douglas fir. Glass—grade A, Libbey-Owens-Ford Glass Co. Screens—galvanized iron mesh, wood frames. Blinds—cleated vertical boards.

FLOOR

Living room, bedrooms, halls, 1/2 x 11/2 in. oak. Kitchen-Douglas fir with linoleum. Bathrooms-tile. Porches-2 in. thick, 12 x 12 in. brown tile, Santa Monica Brick Co.

WALL COVERINGS

Living room-vertical channel Joint boarding, Ponderosa pine. All other rooms-wallpaper sprayed with

WOODWORK

Trim, shelving and cabinets, vertical grain Douglas fir. Doors—California white pine, 4 panel Colonial. HARDWARE

Brass, chromium in kitchen and baths, Russell & Erwin Mfg. Co.

PAINTING

Interior: Walls—living room, shellac and wax finish. Ceilings—coldwater paint, W. P. Fuller. Floors shellac and wax finish. Trim and sash-3 coats enamel, W. P. Fuller.

Exterior: Walls and sash—3 coats lead and oil. Roof—oil stain, W. P. Fuller.

ELECTRICAL INSTALLATION

Wiring systm-rigid iron conduit. Switches-Hart & Hegeman. Fixtures-Roger Electric Co., Los Angeles, Calif.

KITCHEN EQUIPMENT

Stove and refrigerator-General Electric Co. Sink-Standard Sanitary Mfg. Co.

BATHROOM EQUIPMENT

Fixtures-Brunswick-Balke-Collender Co.

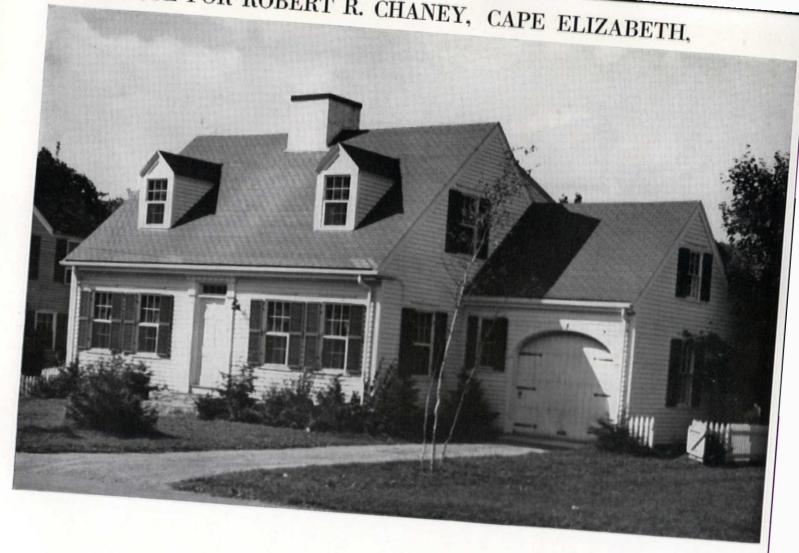
PLUMBING

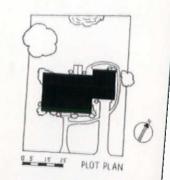
Pipes: Soil, waste and vent-cast iron. Water supplygenuine wrought iron, Reading Iron Co.

HEATING

Electric fan type wall heaters. Hot water heater-Junior Hoyt, Los Angeles.

HOUSE FOR ROBERT R. CHANEY, CAPE ELIZABETH,





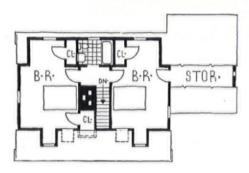
PROBLEM: To build for man, wife, and small child, a Colonial house with an attached garage, to cost not more than \$5,000. Lot size 63 x 90 ft.

The house, both in plan and elevation, is typically New England work in this price class. It was planned originally to finish the space over the garage and to use the room as a child's bedroom when there were guests, but it could not be done within the budget. The exterior has been designed with considerable regard for good precedent. The placing of the windows on the front simplifies the elevation and accentuates the entrance. While the plan is a standard one, the kitchen is unusually large, and has sufficient space for eating and laundering as well as cooking. Its proximity to the living room is an added convenience. Cost: \$5,000 including walks, drive, and grading. Cubage: 20,500 at 24 cents.

MAINE, WILLIAM O. ARMITAGE, ARCHITECT

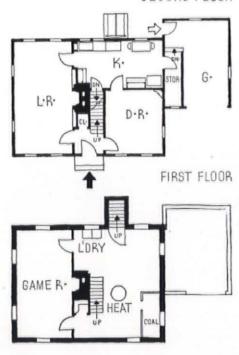


LIVING ROOM



SECOND FLOOR

BASEMENT



CONSTRUCTION OUTLINE

FOUNDATION

Walls-below grade, concrete 1-3-5 mix. Above grade, common brick with air space. Cellar floor-gravel fill, concrete 1-2-4 mix, colored cement finish in play room. Waterproofing-1 coat of hot asphalt outside. STRUCTURE

Exterior walls-2 x 4 in. spruce studs, sheathing, building paper and 6 in. cedar clapboards laid 4 in. to weather, inside lath and plaster. Interior partitions-Red Top insulating lath 18 x 48 in., ½ in. thick, wood fiber plaster, U. S. Gypsum Co. Red Top trowel finish, Keene's cement in kitchen and bath. Floor construction— 2 x 8 in. wooden beams. Ceilings—plaster on Red Top insulating lath.

ROOF

Construction-2 x 6 in. rafters and sheathing. Finishblack composition shingles.

CHIMNEY

Common brick. Lining-81/2 x 13 in. clay. Fireplacepoker control, Donley Bros. SHEET METAL WORK

Flashing and leaders-Armco galvanized iron. Gutters -stock fir.

WINDOWS

Sash-double hung, stock white pine, Glass-quality A. Pennvernon, Pittsburgh Plate Glass Co. Blinds-stock

STAIRS

Plain oak treads, white pine risers and stringers, FLOORS

First floor-

-random width oak cellized planks screwed and plugged. Second floor-21/4 in. face clear white oak. Kitchen and bathroom-linoleum, Armstrong Cork Products Co.

WALL COVERINGS

Living room-paneling, native pine. Wall paper above dado. Bedrooms and halls-wall paper.

WOODWORK

Trim, cabinets and doors—white pine. Garage doors—white pine sheathing made sectional on job to take Crawford Overhead Door hardware.

HARDWARE

Iron for exterior and in living room, remainder brass with glass knobs, Sargent & Co.

PAINTING

Interior: Walls-paneling in living room stained with Colonial stain, dado of living room, kitchen and bath, sized and painted 2 coats. Ceilings—plaster left natural. Floors—filled and stained, 2 coats shellac and 2 coats wax. Trim and sash—oil paint. Exterior: Walls, trim and sash-Dutch Boy white lead, National Lead Co.

ELECTRICAL INSTALLATION

Wiring system-BX. Switches-General Electric. Fixtures—interior pewter finish, exterior black iron, Brighton Chandelier Co.

KITCHEN EQUIPMENT

Stove—gas. Sink—slate. Cabinet—white pine, to detail. Laundry sink—slate trays.

BATHROOM EQUIPMENT

All fixtures by Kohler Co. Cabinet-metal with lights, Miami Cabinet Division, Philip Carey Co. PLUMBING

Pipes: Soil-cast iron. Waste and vent-galvanized iron. Water supply-brass. Tank-30 gal. hot water tank, copper.

HEATING

One pipe steam. Fuel-coal. Boiler, radiators and valves, American Radiator Co. Hot water heater-coil, indirect for winter, gas for summer.

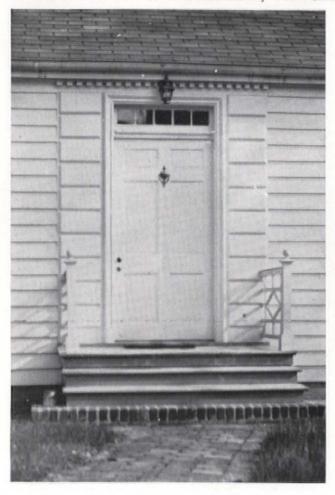
PLAN: Very compact. Circulation direct and easy. The dining room is of ample size and storage and closet space is adequate.

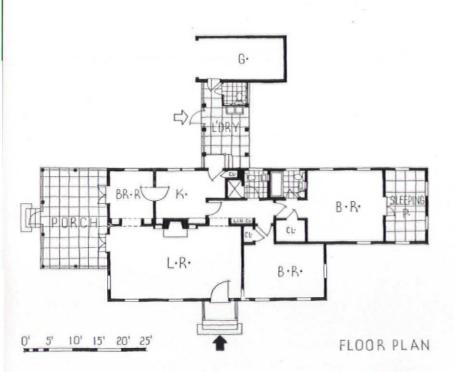
6. HOUSE FOR WILLIAM RUSSELL, COVINGTON, LOUISIANA



The owner found that he could build a house under present financing plans at a cost no higher than the rent he was paying. Unusually ample in its accommodations, the house reflects the local climatic conditions which dictated the rambling plan, the elimination of basement and heating plant, and the extensive use of screened porches. The exterior is handled with appropriate restraint, and the slight enrichment of the main entrance is in keeping with the general character of the house. The small house requires remarkably little embellishment; the pattern provided by windows, doors, and walls is almost invariably sufficient for a pleasing effect. Here, in spite of the general lack of ornamentation, there is no effect of bareness, and the simplicity of the treatment is an excellent foil for the fine trees which surround the house. Cost: \$3,800. Cubage: 31,950 at 12 cents.

DOUGLASS V. FRERET, ARCHITECT





PLAN: Living accommodations for owner, wife, and daughter. The dining room has been eliminated, with a small breakfast room in its place, so located that the porch can be conveniently used for dining. With storage space all on one level, the indicated closet arrangement seems rather meager. An effect of apparent size has been created by the use of porches. Ventilation, most important in this part of the country, has been well provided for by the plan.

CONSTRUCTION OUTLINE

FOUNDATION

Brick piers on concrete footings.

STRUCTURE

Exterior walls—pine siding, felt, 2 x 4 in. studs, 16 in. o.c. Inside—wall board and plaster. Interior partitions wall board and plaster. Floor construction-sub-floor and felt on wooden beams. ROOF

Construction—2 \times 6 in. rafters, 20 in. o.c., 1 \times 6 in. sheathing, felt. Finish—asphalt shingles. CHIMNEY

Common brick, terra cotta flue lining. SHEET METAL WORK Flashing, gutters and leaders—galvanized iron.

INSULATION

None. Weatherstripping-front door.

WINDOWS

Sash—double hung, cypress. Glass—quality A, double strength. Screens—16 mesh copper, cypress frames. Blinds-cypress, Venetian blinds.

FLOOR

Living room, bedrooms and halls— 1/8 x 31/4 in. long leaf yellow pine. Kitchen and bathrooms—covered with linoleum. Porches-11/8 x 31/4 in. long leaf yellow pine. WALL COVERINGS

All rooms are wall papered.

HARDWARE

Interior-brass with glass knobs. Exterior-brass.

PAINTING

Interior: Trim and sash-2 coats lead and oil, 1 coat enamel. Floors—sanded, filled, varnished, waxed. Exterior: Walls—aluminum primer, 2 coats lead and oil. KITCHEN EQUIPMENT

Stove-gas. Refrigerator-electric. Sink-Standard

Sanitary Mfg. Co. BATHROOM EQUIPMENT

All fixtures by Standard Sanitary Mfg. Co.

PLUMBING

Soil and vent pipes-cast iron. Supply pipe-galvanized iron.

HEATING

Gas unit heaters in rooms.

7. MODEL FARM HOUSE (PUGET MILL CO.), LAKE SERENE,



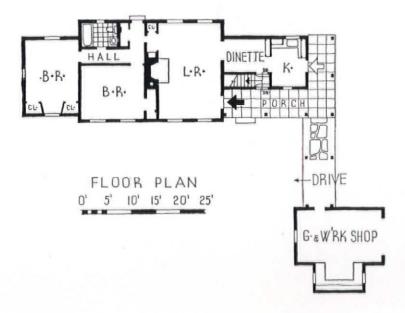
Todd Hazen Photo

PROBLEM: House designed for sale on a lot 120 x 400 ft.

Resembling the type of house found on Cape Cod, but on a somewhat larger scale, the crisp whiteness of the wall surfaces and chimneys presents a sympathetic background for the cool green of the blinds and shrubbery. The architect has taken liberties with traditional design however and has placed the main entrance on the side. To relieve the two double window spaces of the main facade, he planted a large decorative evergreen that completely fills the conventional front entrance space. Breaking the shape of the house by means of subordinate set backs, the designer achieved a pleasant rambling dwelling that adequately fits the site. The garage, built at some distance from the residence but of the same material, is connected to the main portion by a long covered porch that is lined, in typical Cape Cod fashion, on either side by a small picket fence. Cost: \$3,400. Cubage: 22,700 at a little over 15 cents.

WASHINGTON, GEORGE WELLINGTON STODDARD, ARCHITECT





PLAN: The position of the main entrance on the side wall was dictated by the location of the front drive. The basic plan is very neat and compact, with a minimum of cluttering partitions and haphazard closet areas. The kitchen, as is very necessary on a farm, has well lighted, roomy working area.

CONSTRUCTION OUTLINE

FOUNDATION

Walls-continuous 8 in. concrete. Cellar floor-31/2 in. concrete. Waterproofing-hot asphalt.

STRUCTURE

Exterior walls-Royal shingles, 10 in. exposed, Excel Shingle Co., building paper, shiplap sheathing, 2 x 4 in. studs. Inside-wood lath and plaster. Interior partitions-wood lath and plaster on wood studs. Floor construction-wood Joists, shiplap sheathing, ceiling plastered.

ROOF

Construction-2 x 4 in. rafters, 1 x 3 in. roof boards. Finish-5 in 2 perfect shingles, 5 in. exposed, Excel Shingle Co.

CHIMNEY

Common brick, Tri-stop damper.

SHEET METAL WORK

Flashing, gutters and leaders-galvanized iron.

INSULATION

None.

WINDOWS

Sash-double hung wood, Glass-quality B, double strength, Libbey-Owens-Ford Glass Co.

FLOORS

Living room, bedrooms and halls—red oak. Kitchen—fir covered with linoleum, Armstrong Cork & Products Co. Bathrooms—tile, Gladding, McBean & Co. Porches-fir.

WALL COVERINGS

Living room, bedrooms and halls-paper, Imperial Paper & Color Corp.

WOODWORK

All stock, fir—Elmer, Moody & Co. HARDWARE

Interior and exterior-black iron, Yale & Towne Mfg. Co. PAINTING

Interior: Walls-kitchen and bath, oil paint. Ceilingscalcimine, I. F. Laucks Inc. Trim and sash—oil paint. Exterior: Walls and sash—oil paint. Roof—stain. All oil paint and stain by Schorn Paint Co.

ELECTRICAL INSTALLATION

Wiring system—knob & tube. Switches—Hart & Hegeman. Fixtures—direct, Dwyer & Co.

KITCHEN EQUIPMENT

Sink-Standard Sanitary Mfg. Co.

BATHROOM EQUIPMENT

All fixtures by Standard Sanitary Mfg. Co.

HEATING

Warm air-Lennox Furnace Co. Coal fired hot water heater-electric.

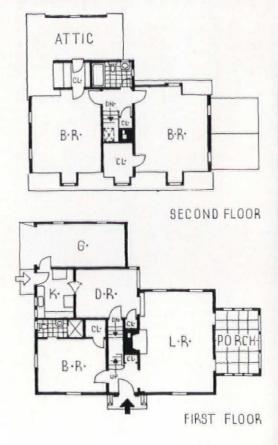
8. HOUSE FOR L. V. BLEDSOE, WINTER PARK, FLORIDA



Page Photos

PROBLEM: Colonial house on a lot 135 x 65 ft. for a man, his wife and child, requiring on the first floor a living room, dining room, kitchen, guest bedroom, bath, sun porch and connected garage, and on the second floor, two bedrooms, a bath and an attic. Cost not to exceed \$5,000.

With so many rooms required on the ground floor, the involved passage from the kitchen to the front door does not seem a serious drawback. The Colonial doorway, with its delicate detail, and the main cornice lend distinction to the house. The wood paneling in the living room (shown in the photograph) gives way to plaster on the other three sides. The fireplace, reminiscent of Cape Cod, is painted white. In plan, the full size of the house may be quickly appreciated. An excellent feature is the first floor bedroom which can be converted into a private guest suite. The second floor shows a closet almost the size of the kitchen. Cost: \$5,000. Cubage: 23,780 at about 21 cents.



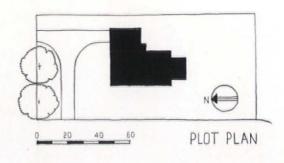
JAMES GAMBLE ROGERS II, ARCHITECT



LIVING ROOM



ENTRANCE



CONSTRUCTION OUTLINE

FOUNDATION

Walls-8 x 8 x 16 in, cement blocks, Cellar floor-cement on sandy loam. Dampproofing-strip of 30 lb. felt mopped in place with hot pitch on top of all piers and foundation walls.

STRUCTURE

Exterior walls-re-sawed siding, 30 lb. felt paper, 2 x 4 in. studs, wood lath and 3 coats plaster. Interior partitions-2 x 4 in. studs, plastered 3 coats. Floor construction-wood Joists, 34 in. sheathing felt paper, wood of first floor is treated with Zinc-Meta-Arsenite.

Construction-wood rafters, sheathing, 15 lb. felt. Finish-No. 35 slate colored Asbestos shingle in random widths, Johns-Manville.

CHIMNEY

Lining-terra cotta. Damper-Majestic Mfg. Co. SHEET METAL WORK

Flashing—16 oz. Anaconda copper. INSULATION

Roof-Red Top insulating wool, U. S. Gypsum Co. WINDOWS

Sash-cypress casements, some double hung. Glassquality B, single strength, Libbey-Owens-Ford Glass Co. Screens-18 mesh bronze in cypress frames. Blindscypress, stationary louvers, close from outside. STAIRS

oak treads, cypress risers, long leaf pine Main stair stringers.

FLOORS

Living room—1916 x 214 in. oak. Bedrooms and halls—first floor, oak, second floor, yellow pine. Kitchen yellow pine covered with linoleum, Armstrong Cork Products Co. Bathrooms -1×2 in. ceramic tile. Porches -6×6 in. red quarry tile.

WALL COVERINGS

Living room-north wall paneled with v-jointed cypress boards, balance plastered.

WOODWORK

Trim-cypress. Shelving and cabinets-cypress, local manufacturer. Doors, interior-fir stock, 5 cross panel. HARDWARE

Interior and exterior-solid brass, Russell & Erwin Mfg. Co. Garage doors-overhead hardware, Overhead Door Co.

PAINTING

Interior: Floors, trim and sash-2 coats Minwax. All plaster to be wall papered later. Exterior: Siding and sash-lead and oil paint, E. I. DuPont.

ELECTRICAL INSTALLATION

Wiring system—BX armoured cable, Switches—tum-bler, Bakelite plates.

KITCHEN EQUIPMENT

Stove-gas. Refrigerator-Frigidaire. Sink-flat rim, Standard Sanitary Mfg. Co. Drainboards, back and side, Hood Rubber Tile. Cabinet—local manufacture. BATHROOM EQUIPMENT

Lavatory, Tub and Toilet-Standard Sanitary Mfg. Co. Seat-Sani-white, Church Mfg. Co.

PLUMBING

Pipes: Soil, waste and vent-cast iron. Water supplygalvanized iron.

HEATING

Warm air gravity. Boiler-equipped with oil burner, Williams Oil-O-Matic Heating Corp. Thermostat-Min neapolis-Honeywell. Hot water heater-Crane "Kero" storage tank, automatic kerosene heater.

9. HOUSE FOR MRS. GEORGE DAUB, HARVEY CEDARS, N. J.



Charles

PROBLEM: A house for an individual owner but so planned that it meets the requirements of an average family and could be sold.

Much of the pleasure in having a home on the ocean lies in being able to look out over the water. Inasmuch as only the houses directly on the shore have undisturbed views of the sea, most home owners have to be satisfied with a restricted view. But not so with this architect's house. Failing to have a lot on the beach he built a house that raised itself up over the level of surrounding homes, enjoyed an excellent unlimited view by concentrating his fenestration on the ocean side. In appearance, he constructed a sort of watch tower, camouflaging its height by the clever use of horizontal clapboarding. A high fence assures privacy from the street. In the summer this fence is continued by inserting panes of glass in the open frame work (see photograph above) with a resultant open courtyard. The third floor is really a sun deck with canvas flooring, access to which is obtained through a very pleasant isolated study or work shop. The wood framework here has been so placed that canvas covering can be stretched across any time that the sun's rays become too hot. Cost: \$3,600. Cubage: 17,000 at 21 cents a cubic foot.

GEORGE DAUB, OFFICE OF WILLIAM LESCAZE, ARCHITECT



LIVING ROOM TOWARD DINING ALCOVE

John Gass

In the interiors, the architect has taken full advantage of the many modern space-saving features, such as built-in furniture, cabinets, etc. To avoid building a partition to separate the dining alcove from the living room, he merely stretched a portière across the room, an innovation that works and is inexpensive. The furnishings are modern with the exception of the Franklin Stove which the owner preferred to a fire place. Venetian blinds protect the main living quarters from the glare of the morning sun, the fenestration being slightly south of east.

HOUSE FOR MRS. GEORGE DAUB, HARVEY CEDARS, N. J.





LIVING ROOM TOWARD DINING ALCOVE



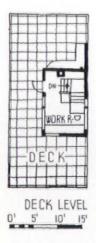
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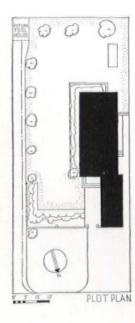
John Gass





SECOND FLOOR





CONSTRUCTION OUTLINE

FOUNDATION

Footings—concrete blocks. STRUCTURE

Exterior walls-10 in. cedar siding, Sisalkraft building paper, 1 in. Thermasote, 2 x 4 in. studs, inside 1/2 in. Homasote, both wallboards made by Agasote Millboard Co. Interior partitions—Homasote on wooden studs. Floor construction—1 \times 12 in. Joists, 1 in. Thermasote, 1 x 6 in. selected N. C. roofers.

ROOF

Construction-1 x 12 in. Joists, 1 in. Thermasote, 1 x 3 in. floor boards planed smooth. Finish-canvas.

CHIMNEY

Lining-terra cotta.

SHEET METAL WORK

Flashing-copper. Leaders-galvanized iron.

INSULATION

See wallboards under Structure.

WINDOWS

Sash-metal casements, Hope's Windows, Inc. Framecypress wood. Glass—1/4 in. plate, quality B, Libbey-Owens-Ford Glass Co. Screens—supplied by window manufacturer. Blinds—Swedish Venetian blinds.

FLOORS

Grass matting on roofers. Kitchen and bathroomswood covered with linoleum, Armstrong Cork Products

WOODWORK

Trim—white pine. Shelving and cabinets—N. C. pine. Doors—fir. Garage doors—built on job.

HARDWARE
Interior and exterior—P. & F. Corbin & Co. Garage
door—Coburn Trolley Track Co., Holyoke, Mass.

PAINTING

Interior-Homasote boards left natural. Exterior, walls and sash-oil paint.

ELECTRICAL INSTALLATION

Wiring system-Romex cable. Switches-toggle. Fixtures-special.

KITCHEN EQUIPMENT

Stove-coal, Sink-combination (laundry and kitchen). BATHROOM EQUIPMENT

Lavatory and toilet—porcelain enamel. Tub—iron enamel by Standard Sanitary Mfg. Co.

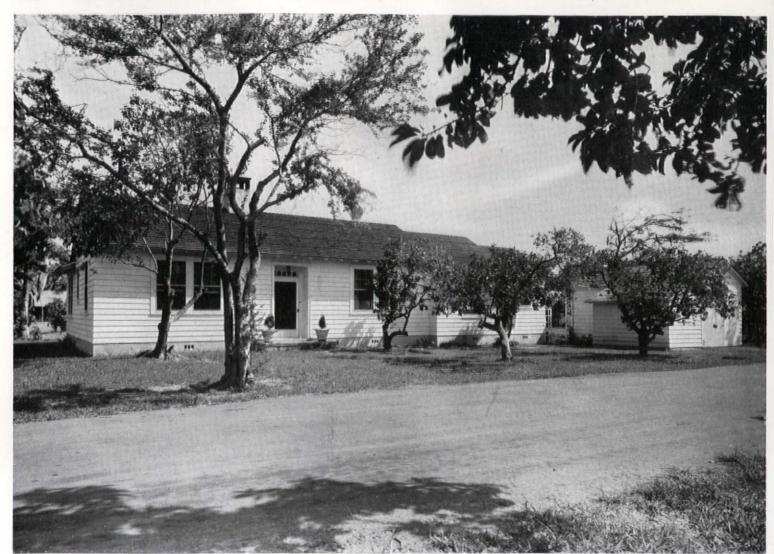
PLUMBING

Pipes-cast iron. Water supply-galvanized steel. HEATING

Franklin coal stove, heater room provided for.

PLAN: A plot 50 x 100 ft. Planned as an elongated house properly to fit the grounds. The garage, although attached to the house, has no direct access to the living quarters. The space allotted for future heat shows that the house may later be turned into an all year 'round home.

10. HOUSE FOR D. V. GODARD, COCONUT GROVE, FLORIDA

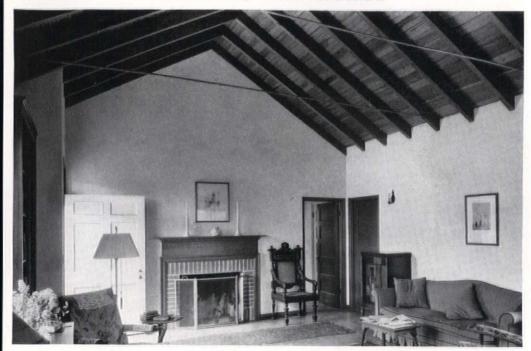


Richard Holt Photos

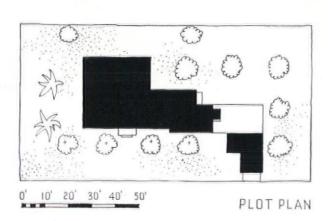
PROBLEM: House for a lot 70×130 ft. to have three bedrooms, two bathrooms, living room, dining room and kitchen.

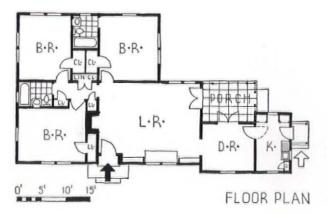
This house has the low rambling appearance of the Monterey type although the frame construction and shingled roof indicate its Eastern origin. From the standpoint of design, the house has been reduced to its most elementary terms. Every detail has been kept in its most fundamental form. In the lack of window blinds, cornice detail, and any decorative frill, the architect has—to a point of severity—refused to force an effect. Yet the result is neither severe nor dull, the carefully studied placement of the windows, the break in the line of the wall, and the use of small trees as decorative motifs, combine to give the house an air of life and vitality. The interiors have been treated with the same restrained discrimination. No doubt the architect was influenced by economy in leaving bare the ceiling construction of the living room and in so doing the room has gained in personality. Cost: \$5,000. Cubage: 19,600 at $25\frac{1}{2}$ cents.

MARION I. MANLEY, ARCHITECT



LIVING ROOM





PLAN: Although the main entrance leads directly into the living room, the sharpness is somewhat alleviated by the fact that the door itself has been set back a few feet from the facade. The location of the three bedrooms as a unit to which there is but really one central approach is commendable.

CONSTRUCTION OUTLINE

FOUNDATION

Footings-continuous concrete. Walls-concrete blocks. STRUCTURE

Exterior wallswood siding, 2 x 4 in. studs. Inside lath and fiberless putty color plaster. Interior partitionswood studs, lath and plaster. Floor construction-reenforced concrete floor slab.

Construction-wood rafters and sheathing. Finishwood shingles.

Common brick, Lining-terra cotta.

SHEET METAL WORK

Flashing-16 oz. copper.

INSULATION

None. WINDOWS

Sash-double hung, wood. Glass-quality A, double strength, Libbey-Owens-Ford Glass Co. Screens-wire

mesh, full length.

Living room-Dycrome hardener and color applied to concrete, Master Builders Co. Bedrooms and hall-cell-ized wood on concrete. Kitchen and bath-linoleum on concrete, Armstrong Cork Products Co. Porch-brick. WOODWORK

Trim, cabinets and doors—cypress. HARDWARE

Yale & Towne Mfg. Co.

PAINTING

Interior: Ceilings—exposed rafters and sheathing, stained. Trim and sash—stained. Exterior: Walls and sash—white lead and oil, Dutch Boy, National Lead Co. Roof—shingles dipped.

ELECTRICAL INSTALLATION

Wiring system—Romex cable. KITCHEN EQUIPMENT

Sink-Standard Sanitary Mfg. Co.

BATHROOM EQUIPMENT

Fixtures-Standard Sanitary Mfg. Co. Seat-No. 10

white, Church Mfg. Co. PLUMBING

Water supply-copper tubing.

HEATING

None.

11. HOUSE FOR STANLEY OZEMICK, EAST HARTFORD, CONN.



George E. Meyers

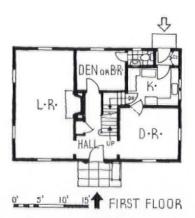
PROBLEM: House designed for sale.

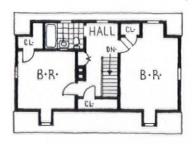
The facade of this pleasing Dutch Colonial house has been carefully planned and proportioned, the two windows, metal leaders and dormers symmetrically balancing each other, leaving the main door—as it should be—the central point of interest. Typical of a great many speculatively built houses this example illustrates the lack of three-dimensional landscape treatment. Abruptly beginning at one corner of the facade the planting works across to the other corner and stops. Had the shrubbery been continued to take in the garage much would have been gained. Cost: \$4,975. Cubage: 20,000 or almost 25 cents a cubic foot.

KEITH SELLERS HEINE, ARCHITECT

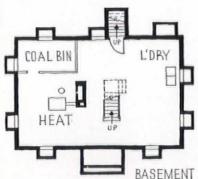


DETAIL LIVING ROOM





SECOND FLOOR



PLAN: The first floor plan gives the owner the option of a den or an extra bedroom, complete with bath. The allotment of a large amount of working space in the kitchen is an excellent detail.

CONSTRUCTION OUTLINE

FOUNDATION

Walls—concrete. Cellar floor—concrete. Waterproofing —hydrated lime in concrete.

STRUCTURE

Exterior walls—2 x 4 in. studding, 16 in. o.c., 1 x 6 in. roofers, building paper; No. 1 Perfection shingles. Inside plastered 2 coats on foil backed Gold Bond rock lath, National Gypsum Co. Interior partitions—2 x 4 in. studding, Gold Bond lath, plastered 2 coats. Floor construction—2 x 8 in. joists, 16 in. o.c., 1 x 6 in. yellow pine roofers for sub-floor, deadening felt. Ceiling 2 coats sand finish plaster on Gold Bond rock lath. ROOF

Construction—2 \times 6 in. rafters, 20 in. o.c. Finish—18 in. No. 1 Perfection shingles, stained.

CHIMNEY

Common brick. Lining-fireclay. Damper-Atlantic Steel Co.

SHEET METAL WORK

Flashing and leaders—16 oz. copper, Gutters—4 \times C in. fir gutters.

INSULATION

Outside walls—foil backed Gold Bond rock lath. Attic floor—3½ in. rock wool, Johns-Manville. Weather-stripping—Silentite, Curtis Companies, Inc. WINDOWS

Sash—Silentite, double hung, Curtis Companies, Inc. Glass—quality B single strength Lustra, American Window Glass Co. Screens—to fit Silentite frames. Blinds—Curtis Companies, Inc.

STAIRS 1½ in. select white oak treads, ¾ in. white pine risers and stringers.

FLOOR

Living room, bedrooms and halls— 78×214 in. white oak. Kitchen—58 in. rift fir covered with inlaid linoleum. Bathrooms—tile. Porches—flagstones.

WALL COVERINGS
Living room, bedrooms and halls—wallpaper. Kitchen
—paint. Bathrooms—tile wainscot.

—paint. Bathrooms— WOODWORK

Trim—Mitertite. Cabinets—stock. Doors, interior—6panel white pine. Doors, exterior—white pine. Garage doors—white pine, all woodwork by Curtis Companies. HARDWARE

Interior and exterior—Stanley.

PAINTING

Interior: Walls, kitchen and lavatory—sized and painted 2 coats lead and oil paint. Ceilings—sand finished plaster, Floors—stain filler and 2 coats Johnson's floor wax. Trim and sash—1 coat lead and oil, 1 coat undercoating, 1 coat semi-gloss enamel, Marietta Paint & Color Co. Exterior: Walls—2 coats white lead and oil. Roof—1 coat Weatherbest shingle stain. Sash—2 coats white lead and oil paint.

ELECTRICAL INSTALLATION

Wiring system-BX cable. Switches-tumbler.

KITCHEN EQUIPMENT

Refrigerator—electric, Sink—Standard Sanitary Mfg. Co.

LAUNDRY EQUIPMENT

Sink-2 part cement laundry trays.

BATHROOM EQUIPMENT

Fixtures — Standard Sanitary Mfg. Co. Cabinet — Corcoran.

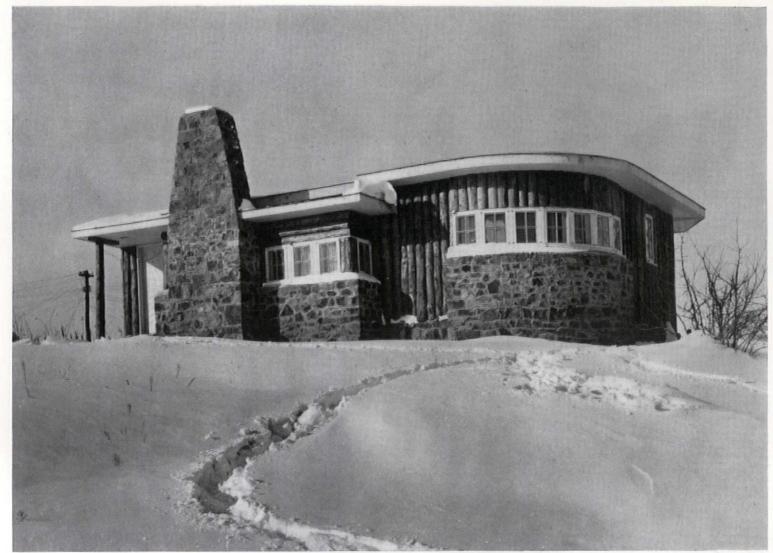
PLUMBING

Pipes: Soil-cast iron. Water supply-brass.

HEATING

Hot water-American Radiator Co. Fuel-coal. Hot water heater-Holyoke Heater Co.

12. HOUSE FOR DR. H. H. SCHLOMOVITZ, BARRON, WISCONSIN



Denison Photos

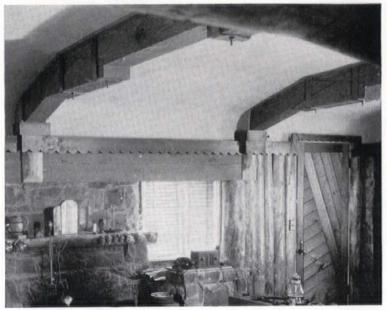
PROBLEM: An informal, easy-to-clean house for a bachelor who wanted it to be different, up-to-date, friendly and inexpensive, with as much built-in furniture as possible.

The client wanted something different and got it. The architects designed a house of stone masonry and vertical wood logs. The flat roof is modern and demonstrates the practicability of this type of roof construction even in Wisconsin's heavy snow belt. In accord with the client's wishes, beds, shelves, cabinets and seats were built-in wherever possible so that in furnishing the house, less than \$100 was needed for additional items. The use of wood girders, composed of three pieces of wood spliced together, is unusual and interesting, and necessary to raise the height of the ceiling of the living room. In plan, the house conforms to what the architect calls the "living room-in-rear, garage-in-front type." The central hall, from which direct access may be had to any room in the house, is especially good. Cost: \$4,400. Cubage: 15,000 at about 29½ cents.

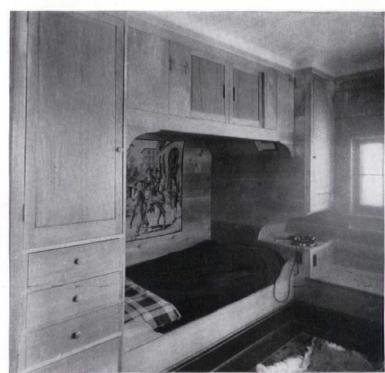
KLINGER & BECKER, ARCHITECTS



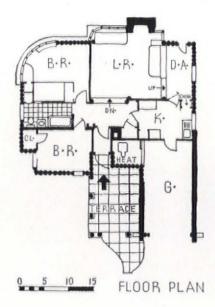
ENTRANCE



LIVING ROOM



BEDROOM



CONSTRUCTION OUTLINE

FOUNDATION

Walls—poured concrete. STRUCTURE

Exterior walls-logs, roofing paper, 2 x 4 in. studs and for the inside surface split logs in living room, cedar shiplap elsewhere. Interior partitions—stud, finished both sides cedar shiplap. Floor construction—wood Joists, all ceilings plastered.

ROOF

Construction-wood rafter and sheathing. Finish-4 ply, built-up asphalt roofing.

CHIMNEY

Field stone. Lining-tile.

INSULATION

Outside walls-4 in. treated shavings. Ground floor-1/2 in. Masonite. Roof-6 in. treated shavings.

WINDOWS

Sash-wood casement, Andersen hardware. Storm sash -double casement. Glass-double strength. Screenswood screens to replace outer casement sash, hinged same as sash. Blinds—Venetian, made locally. FLOORS

All rooms wood floors covered with linoleum, Armstrong Cork Products Co. Porches-flagstone.

WOODWORK

Shelving and cabinets-cedar. Doors-pine. Garage doors-birch.

HARDWARE

Interior-chromed brass, Milwaukee Stamping Co. Garage door-Richards-Wilcox Mfg. Co.

PAINTING

Interior: Walls-shellacked and waxed or varnished. Ceilings—left natural. Trim and sash—stained, shel-lacked, varnished. Exterior: Walls—2 coats creosote. Sash—4 coats paint.
ELECTRICAL INSTALLATION

Wiring system-Romex cable, Pass & Seymour outlets used throughout. Switches-tumbler. Fixtures-built-in, living room indirect cove lighting, lumiline lamps.

KITCHEN EQUIPMENT

Stove—electric, Westinghouse Electric & Mfg. Co. Re-frigerator—Norge Corporation. Sink—cabinet sink, Kohler Co. Cabinet-built-in.

BATHROOM EQUIPMENT

Lavatory-vitrified china, pedestal. Tub-enameled iron. Toilet-vitrified china, syphon jet, fixtures by Kohler Co. Shower-Speakman Co. Cabinet-steel, mirror door, Crane Co.

PLUMBING Pipes-iron.

HEATING

Hot water. Boiler-Weil-McLain Co., "Heil" oil burner. Radiators-Raydiant, Weil-McLain and copper fin convectors. Valves-Hoffman Specialty Co. Thermostat-Minneapolis-Honeywell Regulator Co. Hot water heater -triple duty system, Bell & Gosset Co.

13. HOUSE FOR IRA P. JONES, NASHVILLE, TENNESSEE



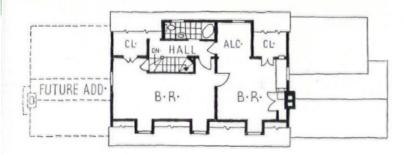
PROBLEM: House for two people, one child. Requirements: kitchen, dining room, living room, three bedrooms and two bathrooms. Cost not to exceed \$5,000.

With the intention of adding to his home at some later time, the designer decided that a story and a half Cape Cod Colonial house would best fill his need. In outward appearance he has achieved a creditable result. The main portion of the house is typically Cape Cod, especially in balance and in the horizontal line maintained by the tops of the windows with the top of the front door. To avoid constructing a cellar, a heating unit was installed in a wing which, to keep its proper position, was set back a few feet from the line of the main facade. A one-car garage is included in this subordinate wing. The landscaping has been successfully continued to include both main portion and wing. The walls of the living room have been paneled and the construction beams exposed, a direct contrast to the staid puritanism of the exterior. Space has been saved with built-in book cases. Cost: \$4,850. Cubage: 22,000 at about 22 cents.

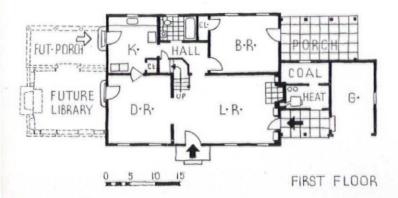
IRA P. JONES, DESIGNER



LIVING ROOM



SECOND FLOOR



PLAN: The first floor bedroom, with its adjoining bath and private entrance, is a commendable feature. Influenced by the desire to save space an entrance hall was omitted, a suitable arrangement in the South. The garage has a covered access to the house by means of the front porch. When later additions are built, they will balance the subordinate wing, as shown in the dotted lines.

CONSTRUCTION OUTLINE

FOUNDATION

Walls-native stone, continuous. Garage and boiler room, 8 in. poured concrete foundation.

STRUCTURE

Exterior walls-2 x 10 in. long leaf pine siding, resawn and shiplapped together with rough side turned out, Sisalkraft paper on wood studs. Inside wood laths and plaster. Interior partitions-wood studs, wood laths and plaster.

FLOOR CONSTRUCTION

First floor—Joists 2 x 8 in., 12 in. o.c., no sub-floor. Garage wing has 3 in. concrete floor on fill. Second floor-4 x 8 in. wood beams, 24 in. o.c., no sub-floor.

Construction-2 x 6 in. rafters, 24 in. o.c., each rafter braced by partition walls on second floor, No. 6 pine sheathing. Finish—Standard composition shingles, Johns-Manville.

CHIMNEY

Used brick. Lining-9 x 12 in. terra cotta for boiler flue, 12 x 12 in. for fireplace flue. Fireplace-damper, Peerless Mfg. Corp., Louisville, Ky.

SHEET METAL WORK Flashing—30 lb. tin. Gutters—4 x 6 in. shadowline fir gutters, Long Fir Gutter Co. Leaders-26 gauge galva-

INSULATION

Roof—entire roof area including gable ends, sides, ceilings and all dormers 4 in. of loose wool, Johns-Manville

WINDOWS

Sash-wood, Silentite, Curtis Companies, Inc. Frame-Silentite weather stripped white pine. Glass-Lustraglass, quality B, single strength, American Window Glass Co. Screens-full length "Prefit" with galvanized wire and hangers as furnished with the Silentite unit. STAIR

Curtis stock stairway parts with special turned newels. FLOORS

Random width No. 1 common pine. Bathroom-1 x 4 in. No. 1 pine.

FLOOR COVERINGS

Bedrooms on second floor covered with felt and matting. Bathrooms-covered with linoleum, Armstrong Cork Products Co.

WALL COVERINGS

Bathroom and first floor-covered from floor to ceiling with Linowall, Armstrong Cork Products Co. Second floor bath-3 ft. 6 in. wainscot of Linowall.

WOODWORK Paneling-knotty white pine in living room and dining

room, wainscot in kitchen. Trim, shelving and cabinets -stock Curtis white pine. Doors, interior-6 knotty white pine, manufactured by local mill. Doors, exterior-stock Curtis white pine. Garage doors-made by local mill and equipped with Curtis up-and-over hardware.

HARDWARE

Interior—cast iron, rim locks, wrought brass knobs, Yale & Towne Mfg. Co.

PAINTING

Interior: Walls-kitchen and baths painted above wainscot and ceiling, Bever Products Co. Ceilings—wood ceilings on first floor stained and waxed with wax, Acme Paint & Color Co. Trim and sash—wax stain. Exterior: Walls and sash-painted with Cabot's Old Virginia white.

ELECTRICAL INSTALLATION

Wiring system—knob and tube. Wire by Providence Insulated Wire Co. Switches—Bryant Electric Co. Fixtures-direct, Radiant Lighting Fixtures Co.

KITCHEN EQUIPMENT

Stove—Hotpoint, General Electric Mfg. Co. Refrigerator—Frigidaire, General Motors Co. Sink—Standard Sanitary Mfg. Co. Cabinet-stock Curtis.

BATHROOM EQUIPMENT

Lavatory, tub, toilet—Standard Sanitary Mfg. Co. Seat—Church Mfg. Co. Cabinet—stock Curtis.

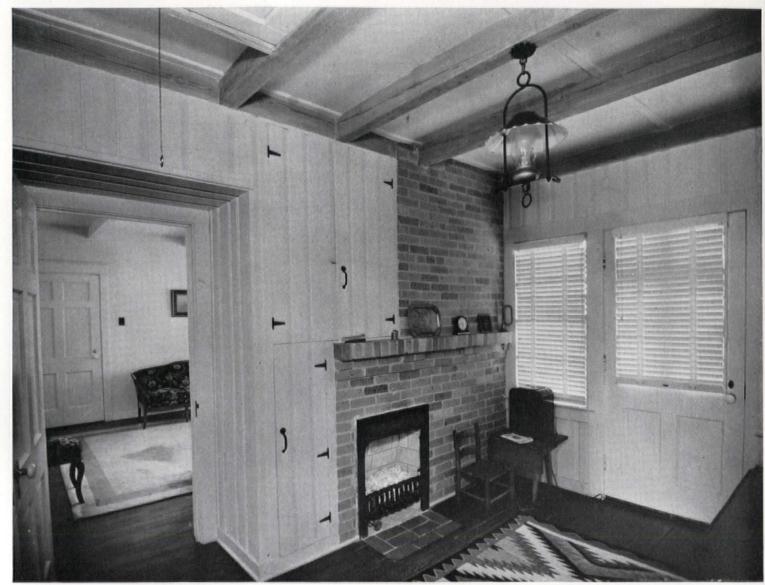
PLUMBING

Pipes-Standard Sanitary Mfg. Co.

HEATING

Hot water-Standard Sanitary Mfg. Co. and American Radiator, combined. Boiler-coal hand fired, American Radiator Co. Radiators-Corto, American Radiator Co. Hot water heater-coal burning stove, Standard Sanitary Mfg. Co.

14. HOUSE FOR GRAYSON GILL, DALLAS, TEXAS

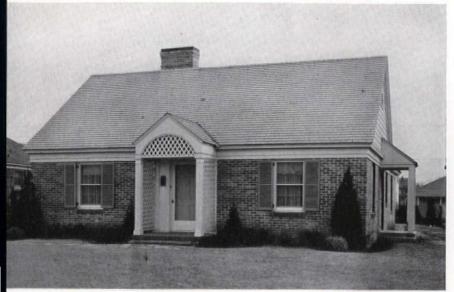


BREAKFAST-SITTING ROOM

PROBLEM: House for a couple with one child. On cold mornings, bedrooms, bath, kitchen and breakfast nook must be used without heating dining or living room. A southeast porch or terrace with convenient entrance from automobile. The two bedrooms and living room to have a southern exposure. An attic playroom, insulated for winter and summer comfort, which can on occasion be turned into a third bedroom.

This tidy little Dallas house is pleasing in proportion and in its use of materials. In the handling of the interiors, the architect has shown taste and originality. The small fireplace in the breakfast room is well designed and solves one of the requirements. The wood paneling, repeated in the living room, has good surface quality and is economical. Other walls of painted plaster board furnish contrast. The built-in cabinets, with rustic iron hinges, are contemporary adaptations handled in an agreeable manner. There is no cellar. The upper floor or attic is reached by a movable stair. Cost: \$4,500. Cubage: 22,500 at 20 cents.

GRAYSON GILL, ARCHITECT



RONT

Harry Bennett Photos



LIVING ROOM

PLAN: Virtually every square foot of usable space has been utilized in this small house. The sitting room provides a comfortable retreat when the children are entertaining and serves as a central hall so arranged that its furniture does not impede circulation between the several rooms. All living rooms have cross ventilation. The front hall was omitted at the request of the owner. The rather awkward spacing of closet areas in the bedrooms could have been improved. In the matter of orientation and heating, the plan completely satisfies the requirements.



CONSTRUCTION OUTLINE

FOUNDATION

10 x 18 in, reenforced concrete grade beam on 10 in. round reenforced concrete piers to rock, approximately 3 ft. 6 in, below grade.

STRUCTURE

Exterior walls-common brick veneer, 8 lb. tar saturated felt, shiplap 2 x 4 in. studs at 16 in. o.c., inside 1/2 in. gypsum board, U. S. Gypsum Co. Interior partitions— $\frac{1}{2}$ in. gypsum board on 2 x 4 in. studs at 16 in. o.c. Floor construction—2 x 10 in. joists at 16 in. o.c., 1 x 6 in, sub-floor, Ceiling finish-living room and breakfast room 1/2 in. Nu-Wood laid on 4 x 6 in. exposed ceiling beams.

ROOF

Construction-2 x 4 in. rafters at 24 in. o.c. Finish-No. 1 Perfection red cedar shingles 5 in 21/4 in. laid 51/2 to weather.

CHIMNEY

Brick walls, 8 in.

SHEET METAL WORK

Flashing, gutters and leaders, 26 gauge galvanized copper bearing steel.

INSULATION

Attic-walls and ceilings finished with 1/2 in. Nu-Wood, Wood Conversion Co. Weatherstripping, The National Metal Weather Strip Co., Dallas, Tex.

WINDOWS

Sash—stock white pine, casements in the kitchen, double hung elsewhere. Frame—stock Southern pine. Glass-quality B, double strength, Libbey-Owens-Ford Glass Co. Screens-white pine frame, galvanized screen wire, full length, top hung. Blinds-fixed louver, white pine, hung on Yale cast iron blind butts. STAIRS

Attic stair-No. 45 stock folding stair, Bessler Disappearing Stairway Co.

FLOORS

Living room and bedrooms-select oak. Halls and breakfast room-sound and wormy oak plank, V-jointed. Kitchen-standard weight inlaid linoleum, Armstrong Cork Products Co. Bathrooms-ceramic mosaic tile. Porches-front stoop, Acme half brick. Other porches concrete.

WOODWORK

Trim-select Southern pine. Shelving and cabinets-Ponderosa pine. Doors-stock Ponderosa pine. Garage doors-car siding trimmed with No. 1 Southern pine

HARDWARE

Interior-China knobs, exterior-polished brass, Yale & Towne Mfg. Co.

PAINTING
Interior: Walls and ceilings—1 coat of sealer, and 1 coat flat plaster paint, Textone, U. S. Gypsum Co. Floors-stained, filled, treated with Bruce floor finish and waxed with Du Pont paste wax. Trim—primed and 1 coat of undercoater. Kitchen and bath finished glossy, all other woodwork including paneling finished semi-glossy. Exterior: Walls-unpainted. Roof-shingles stained silver gray. Sash and other wood trimprimed and 1 coat semi-gloss. All paint by E. I. Du Pont.

ELECTRICAL INSTALLATION

Wiring system-rigid conduit, Steel & Tubes Inc. Switches-Harvey Hubbell Inc. Fixtures-Lightolier Co. KITCHEN EQUIPMENT

Stove-Ironton gas range. Refrigerator-Norge Corporation. Sink-two trays, flat rim with removable strainer. Cabinet-white pine, built on Job.

BATHROOM EQUIPMENT

Lavatory—pedestal, tub—full recess, toilet—two piece, shower—combination with tub, all fixtures by Crane Co. Cabinet-wood by mill.

PLUMBING

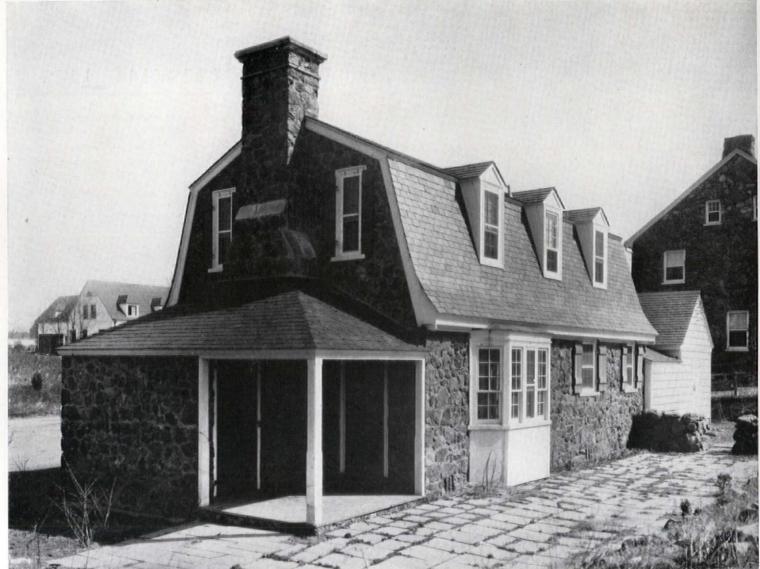
Pipes-cast iron and galvanized steel. Water supplygalvanized steel, all hot water piping, copper tube.

One Fraser gas floor furnace in living room, gas grate in breakfast room, gas outlets in all other rooms. Hot water heater-gas storage type heater, General Water Heater Co.

SPECIAL EQUIPMENT

Radio outlet in living room and breakfast room. Venetian blinds in breakfast room and bathroom.

15. HOUSE FOR ROBERT E. LEE JR., CHARLOTTESVILLE,



Hobinger Photo

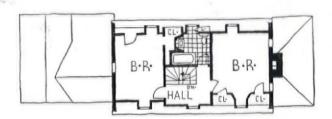
PROBLEM: House in Colonial style with two bedrooms and one bath. Cost not to exceed \$5,000, including landscaping. Lot size 75×100 ft.

A local tradition of considerable antiquity has been followed in the design of this stone house. Where native materials are plentiful and workers trained in their use are available, the procedure is definitely commendable. The chief charm of the small house lies in its use of materials and its proportions, as cost and size effectively prevent any extensive use of applied ornamentation. The gambrel roof not only adds much to the living space on the second floor, but contributes in this case to an attractive exterior due to the pleasant juxtaposition of slate roof and stone walls. The stone wall which keeps the planting at some distance from the house is an excellent feature and provides another contrast of materials. Cost: \$4,875. Cubage: 17,008 at 29 cents.

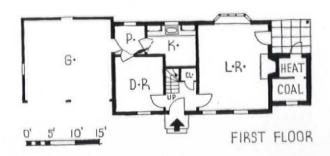
VIRGINIA, MILTON L. GRIGG, ARCHITECT



LIVING ROOM



SECOND FLOOR



PLAN: The elongated plan is common in this locality. It will be noted that if the heater room and garage were removed, what remains would be a standard small house plan. The pantry is unusual in houses of this size.

CONSTRUCTION OUTLINE

FOUNDATION

Walls-continuous field stone. Cellar floor-concrete, no fill.

Exterior walls—field stone, 2 x 4 in. stud frame. Red Top rock lath and U. S. Gypsum plaster on interior. Interior partitions—2 x 4 in. stud plastered both sides on rock lath. Floor construction-first floor, 2 x 8 in. joists, second floor, 2 x 10 and 4 x 12 in. joists, T. & G. sub-floor. Ceilings-plaster on rock lath. ROOF

Construction-wood frame. Finish-30 lb. felt and No. 2 in. Buckingham-Virginia slate.

Field stone, slate cap, fire clay flue lining. Fireplace lined with Old Virginia hand made brick, Alberene stone hearth and H. W. Covert damper. SHEET METAL WORK

Flashing-40 lb. tin.

INSULATION

Roof-rock wool bats, U. S. Gypsum Co. Weatherstripping-Monarch on doors.

WINDOWS

Sash-white pine, double hung. Glass-single strength, quality A, Libbey-Owens-Ford Glass Co. Screenswood frame outside full and half sliding. Blindswood, battened.

STAIRS

Yellow pine, birch rail.

FLOOR

Living room, bedrooms and halls-No. 1, common random width, short leaf pine 4 to 8 in. wide, Charlottesville Lumber Co. Kitchen and bathrooms-No. 1, common pine, covered with gauge D linoleum, Armstrong Cork Products Co. Porches—Alberene stone flagging.

WALL COVERINGS

room-natural redwood wainscot. Bedrooms Living and halls-Imperial paper. Kitchen-Keene's cement. Bathrooms-wall linoleum, Armstrong Cork Products Co.

WOODWORK

Trim, shelving and cabinets—yellow pine and red-wood. Doors—redwood. Garage doors—rough sawn vellow pine.

HARDWARE

Interior-wooden latches and old hinges. Exteriordoors have Corbin and Reading. Other exterior hardware-old wrought iron.

PAINTING

Interior walls-living room, Farbo, Farboil Paint Co. Kitchen-Wallhide, Pittsburgh Plate Glass Co. Ceilings-Farbo. Floors-filled, shellacked and waxed. Trim and sash-living room, oiled and waxed, elsewhere 3 coats Devoe & Raynolds. Exterior walls-garage, Safety-white, white wash. Sash-double white, Samuel

Cabot, Inc.
ELECTRICAL INSTALLATION

Wiring system-BX cable. Switches-gang switches, Pass & Seymour. Fixtures—special design executed by Ritchie Electric Co.

KITCHEN EQUIPMENT

Stove—Universal electric, Landers, Frary & Clark. Refrigerator—Westinghouse Electric & Mfg. Co. Sink— Standard Sanitary Mfg. Co. Cabinet-special built-in of wood.

BATHROOM EQUIPMENT

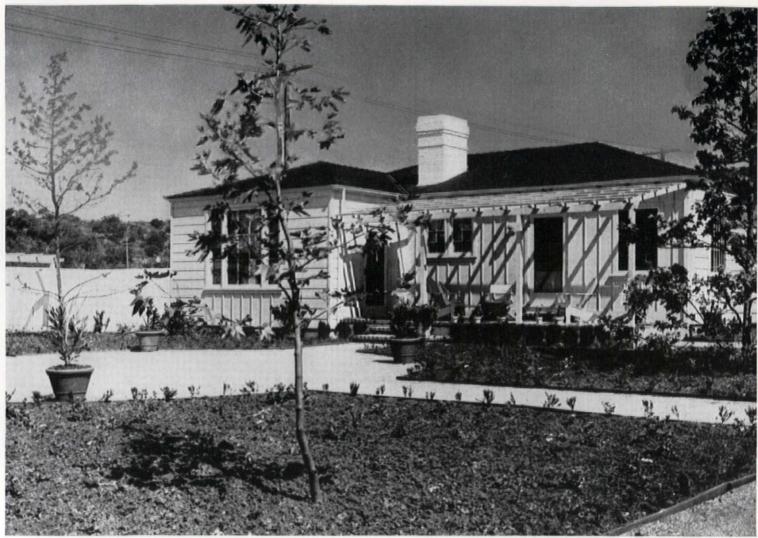
Lavatory—wall hung, tub—single shell, toilet—silent, all by Standard Sanitary Mfg. Co. Seat—Church Mfg. Co. Cabinet—Columbia Metal Box Co. PLUMBING

Soil and vent pipes-Glaymorgan cast iron. Water supply-Reading wrought iron.

HEATING

Hot water-Arcola type. Boiler-round type. Radiators, valves, thermostat control and hot water heater, complete heating system by American Radiator Co.

HOUSES FOR G. HOLBROOK AND F. CAREW. 16-17.

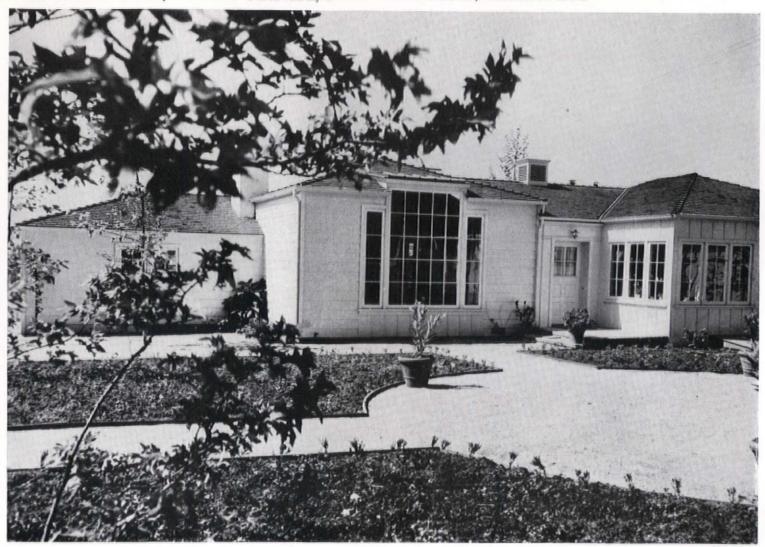


HOLBROOK HOUSE

PROBLEM: Two houses with a common garden, the one to have a large living room with studio space and north light, the other a subordinate main entrance with a patio off the living room. All bedrooms to have private baths. The houses to be so planned that either one can be sold.

An unusual problem in which the architect successfully demonstrated on a miniature scale the advantages of community planning. Built on adjoining lots, each 70 x 100 ft., with a large common garden between, each house retains a distinct degree of privacy with its own intimate terrace and patio space. To keep down the cost of construction, the architect chose stout, inexpensive materials, designed informal, nicely detailed individual homes. In both cases he varied the plans to meet the individual requirements without losing the basic relationship of one house to the other. All water, sewer, gas and other utility connections were kept entirely distinct to avoid difficulties should either property be sold. The landscape design is by Conrad Konrad. Cost: each house \$4,400. Cubage: 23,065 at a little over 19 cents.

LOS ANGELES, CALIFORNIA, JONATHAN RING, ARCHITECT



CAREW HOUSE

Wm. Clarke

PLANTING DEVELOPED

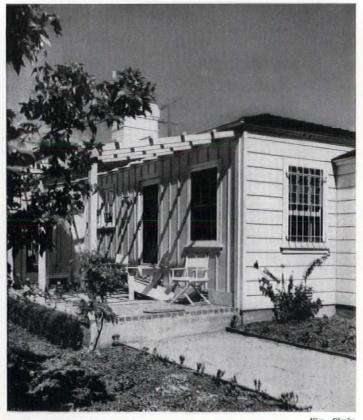


HOLBROOK AND CAREW HOUSES, LOS ANGELES, CALIF.

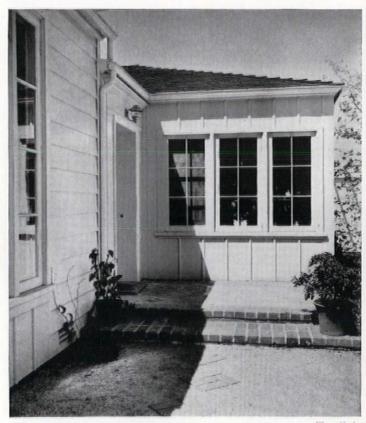


THE TWO HOUSES AND GARDEN

DETAILS



Wm. Clarke



Wm. Clark

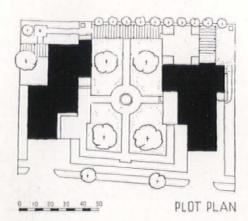
PLAN: In accordance with both clients' wishes, bedrooms and dining rooms were kept as small as possible without sacrificing the mass interest of the exterior. In both cases, the attached garages have been placed in front, allowing all living portions of the houses to face the garden, and gaining quiet by their distance from the street.



FLOOR PLAN

HOLBROOK HOUSE





CONSTRUCTION OUTLINE

FOUNDATION

Walls-6 in. concrete under outside walls, 4 x 4 in. posts 6 ft. o.c. under 4 x 6 in. girders supporting floor joists. Cellar floor-cement.

STRUCTURE

Exterior walls-2 x 4 in. studs, siding outside, plaster inside. Interior partitions 2 \times 4 in. studs, plastered. Floor construction—2 \times 6 in. Joists on 4 \times 6 in. girders 6 ft. apart, common sub-floor. Ceiling finish—plaster.

Construction-2 x 4 in. rafters with shingle strips 1 x 3 in., 5 in. o.c. Finish-5 in 2 in., 16 in. western red cedar, 5 in, exposure.

CHIMNEY

Common brick, 9 in. Fireplace-damper, Superior Fireplace Co. SHEET METAL WORK

Flashing-galvanized iron, Armco 26 gauge. Gutters and leaders-galvanized iron, Armco 24 gauge.

INSULATION

None.

WINDOWS

Sash-casement and double hung, California pine 1% thick, Frame—Douglas fir. Glass—quality B, flat drawn single strength, Libbey-Owens-Ford Glass Co. Screens -galvanized No. 14 wire mesh in 34 x 2 in. California pine frames.

FLOORS

Living room, bedrooms and halls, 1/2 x 2 in. white oak, 2nd grade plain sawn. Bathrooms—tile, matt glaze. Porches—common brick laid in 2 in. bed of sand. WALL COVERINGS

All wall finish furnished by owner except: kitchen, Sanitas enameled. Bathrooms-tile wainscot in shower compartment.

WOODWORK

Trim-Douglas fir. Shelving and cabinets-California pine. Doors, interior—California pine, stock, 4 molded raised panels, 136 in. thick. Doors, exterior—California pine, special design, 134 in. thick. Carage doors—Douglas fir, board and batten type, special design.

HARDWARE

Interior-butts painted, bright brass locks, Sargent & Co. Exterior-galvanized iron painted, entrance door brass.

PAINTING

Interior: Ceiling-sand finish calcimined. Floorsstained and waxed. Trim—Douglas fir, enameled 3 coats. Sash—enameled inside. Exterior: Walls—3 coats lead and oil paint, Fuller Paint Co. Roof-1 coat Creosote stain, Samuel Cabot. Sash-3 coats lead and oil. ELECTRICAL INSTALLATION

Wiring system—rigid conduit, Steel & Tubes, Inc. Switches—Bryant Electric Co.

KITCHEN EQUIPMENT

Sink—acid resisting porcelain enameled, Standard Sanitary Mfg. Co. Cabinet—California pine. Wash tray -Kohler Co.

BATHROOM EQUIPMENT

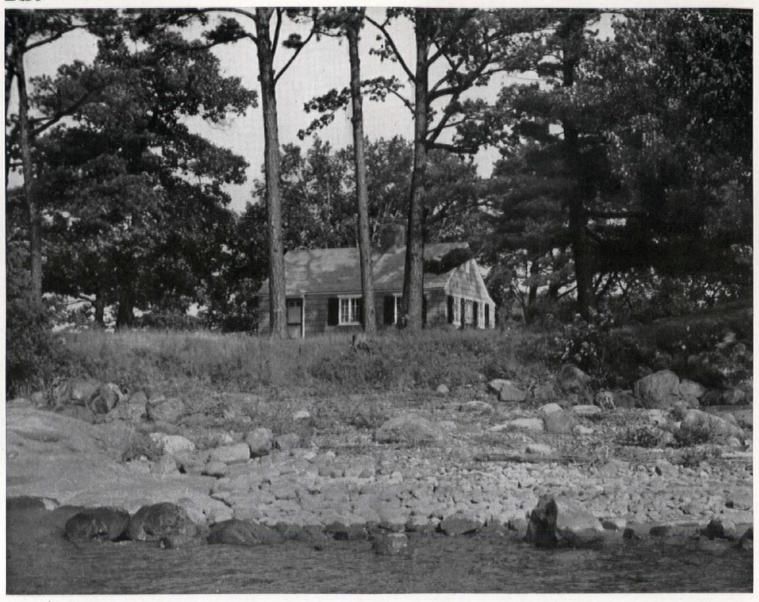
Lavatory and tub—enameled iron. Toilet—porcelain, all by Kohler Co.
PLUMBING

Pipes-galvanized iron 34 in. throughout. Cesspool-30 ft. deep.

HEATING

Warm air, 2 unit heaters controlled by push buttons in rooms. Hot water heater—30 gal. gas automatic storage

18. HOUSE FOR DR. RAYMOND C. PARKER, CLAYTON, NEW YORK



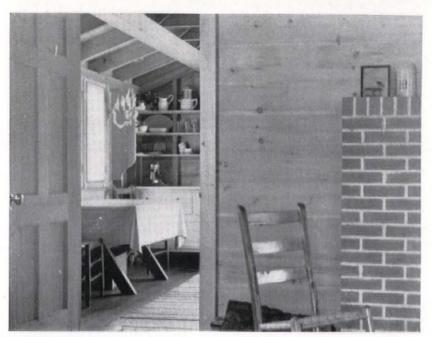
PROBLEM: A small house for one person. The site: a point of land—two acres, extending north into river from Grinstone Island, bounded on three sides by water. The house to have provision for guests: two bunks in the bedroom and a double bed in the living room.

The rustic setting and the owner's desires called for the simplest possible expression of his requirements. The architect wisely designed a plain, compact Cape Cod type of cottage, with central chimney and shingled walls. In the interior, however, he departed from the usual Early Colonial and left the wood sheathing and rafters exposed. The result is both pleasing and satisfactory. The fireplace, without wood mantel or frills, is as simply constructed as the rest of the house, and reiterates the desire of the architect not to dress up the house. Well proportioned, a bay window with a built-in seat balances the large fireplace. The cost would have been less had it not been necessary to transport by boat, labor and materials from the nearest settlement seven miles away. Cost: \$2,222. Cubage: 6,827 at about $32\frac{1}{2}$ cents.

ROBERT S. HUTCHINS, ARCHITECT



REAR VIEW



LIVING ROOM-KITCHEN



LIVING ROOM



PLAN: The plan is as compact as it is simple. The imposition of the double bed in the living room makes the only access to the bedroom through the kitchen, a minor consideration. With space provided for a future bathroom, equipment will be installed later.

CONSTRUCTION OUTLINE

FOUNDATION

Footings-continuous poured concrete. Waterproofingtar felt, all walls and floors.

STRUCTURE

Exterior walls-Creo-dipt shingles, tar felt, horizontal wood sheathing, wood studs exposed inside. Interior partitions—wood studs with flush jointed ship lap boards. Floor construction-wood joists, tar felt, rough and finish flooring, fir. Ceiling living room exposed Joists and ties. ROOF

Construction-wood rafters, ties, sheathing and tar felt. Finish-Creo-dipt shingles.

CHIMNEY

Common brick with firebrick hearth. Fireplace with asbestos insulation, Heatilator Co. SHEET METAL WORK

Flashing-16 oz. copper. Roofing over bay windowcopper.

INSULATION

None.

WINDOWS

Sash-wood casement, white pine. Storm shutters to fasten from inside. Screens-inside, in wooden frames. FLOORS

Wood throughout.

WOODWORK

Trim, shelving and cabinets, pine, local millwork. Doors, interior and exterior-solid six panel, pine. HARDWARE

Interior and exterior-Yale & Towne Mfg. Co. PAINTING

Interior: Walls-ceilings, trim and sash left natural. Floors—stained dark and waxed. Exterior: Walls and roof—Creo-dipt shingles, silver gray. Sash—white, 4 coats of lead and oil.

ELECTRICAL INSTALLATION

None.

KITCHEN EQUIPMENT

Stove-kerosene.

BATHROOM EQUIPMENT

None.

PLUMBING

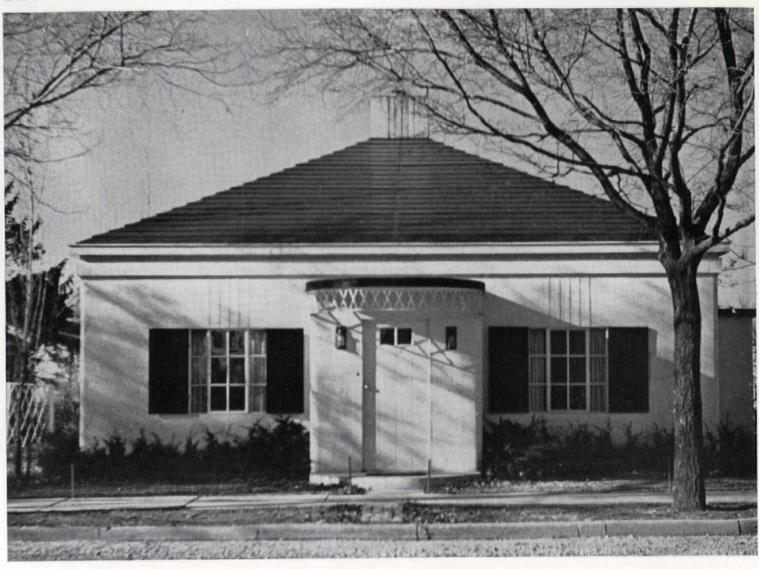
None.

HEATING

Warm air circulating generated by Heatilator fireplace, centrally located to serve three rooms.
SPECIAL EQUIPMENT

Venetian blind on large bay window.

19. HOBART BROTHERS ALL STEEL HOUSE, TROY, OHIO



PROBLEM: To design a prefabricated house that will not look like a prefabricated house.

This new addition to the existing types of factory-fabricated dwellings is based on a panel system which requires no frame. It attempts to reconcile an accepted traditional exterior and a radically non-traditional kind of construction and is not without interest. Everything in the house is of steel—roof, shutters, doors, and interior wall surfaces. Since the house is not yet in production on any appreciable scale, accurate cost figures are not available on a production basis. Cost: \$3,300. Cubage: 11,700 at 28 cents.

WILLIAM G. WARD, ARCHITECT

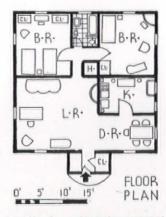


DINING ALCOVE



KITCHEN





PLAN: An extremely compact and economical arrangement, with a minimum of waste space. A dining alcove gives the small living room an overflow space materially increasing the livability of the house.

CONSTRUCTION OUTLINE

FOUNDATION

Walls—continuous poured concrete. Waterproofing—integral waterproofing in concrete mix.

STRUCTURE

Exterior walls—built of prefabricated steel units 4 ft. wide, 9 ft. high and 4 in. thick. These units form the supporting structure, each unit being welded on the vertical joint to each adjoining unit and also welded to a continuous steel sill plate which is cast into the foundation walls. The wall units consist of an inner and outer steel plate 4 x 9 ft. set 4 in. apart, each plate stiffened vertically with steel angles on 1 ft. casters and cross braced, the entire unit being shop assembled and welded. A continuous steel channel on top of the wall sections distributes the weight uniformly over the wall. Interior partitions—are built up with similar type of hollow prefabricated steel plate units as exterior units. First floor—reenforced concrete slab with finish. The first floor ceiling is steel, consisting of a 4 x 8 ft. steel plate which is shop welded to the bottom of the steel joists. The joists are built up of light steel angle sections lattice type, spaced 1 ft. apart forming a unit 4 x 8 ft., resting on outside walls and on cross steel beams or partition walls.

Construction—framed with bent steel channel section rafters. Welded at sill and hip intersections. Roof covering is of steel plates stiffened by offset breaks about 10 in. apart forming horizontal shingle lines. CHIMNEY

Heavy gauge steel with steel lining, no fireplace.

SHEET METAL WORK

The sheet metal gutters are of box type forming the main cornice with an inner lining. Leaders—round section sheet metal.

INSULATION

Outside walls are insulated with 4 in. thickness of rock wool packed between inner and outer wall finish plates. Inside partition walls are filled with rock wool for sound deadening. Ceiling Joists filled with rock wool insulation. Exterior doors weatherstripped with spring bronze at Jambs and sills.

WINDOWS

Sash—steel casement, out swing type, manufactured by The Hobart Co. are set in sheet metal frames which fit the 4 ft. wide wall sections. Glass—double strength. Windows are equipped for roll screens. Exterior shutters are of hollow metal construction. Venetian blinds. FLOORS

The finish floor of living room, dining room, hall and bedrooms is of ozite carpeting cemented to the concrete first floor slab. Kitchen and bathroom floors have linoleum.

DOORS AND TRIM

No wood used throughout the house. Doors are of hollow metal construction. Cabinets and shelving are of sheet metal. Base is of metal and forms a wiring channel.

HARDWARE

Bronze throughout—Schlage Lock Co.

PAINTING

Entire exterior and interior of the house is painted with 3 coats of lead and oil paint sprayed on with air gun over the shop coat of metal preservative paint. The final finish coat is sprayed with fine white sand. ELECTRICAL INSTALLATION

Flexible armored cable with all outlet boxes, etc. set in flush, the base board is used as a wiring channel.

KITCHEN EQUIPMENT

Stove—Estate Stove Co. Refrigerator—Kelvinator. Kitchen cabinets are of sheet metal with stainless steel work top over lower cupboards and a built-in stainless steel sink.

BATHROOM EQUIPMENT

All fixtures, including a water closet, bath tub and lavatory, by Standard Sanitary Mfg. Co. PLUMBING

Galvanized steel and wrought iron pipes.

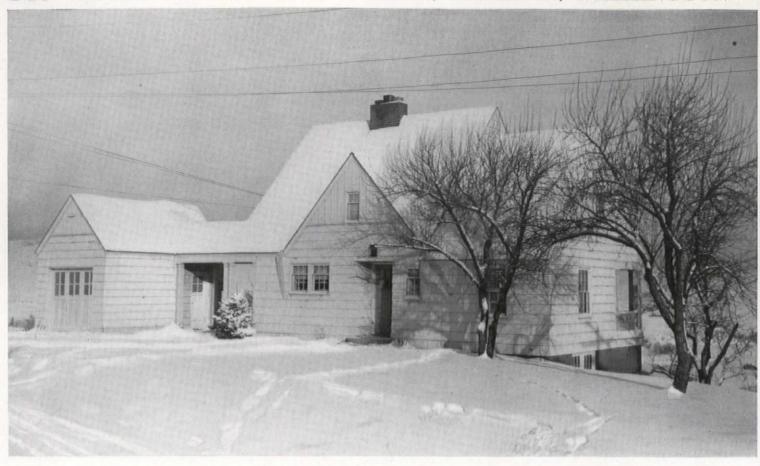
HEATING AND AIR CONDITIONING

Forced warm air distributed in metal ducts run in partitions to metal registers. The heating unit is a square type stoker fired warm air furnace equipped with air filter and blower fan. Gas fired hot water heater.

SPECIAL EQUIPMENT

Rooms are equipped with sheet steel cabinets, built by The Hobart Co.

20. HOUSE FOR HARRY C. WELLER, PULLMAN, WASHINGTON



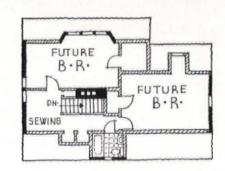
PROBLEM: Given a sloping corner lot 100 x 120 feet with a superlative view to the north, to design a house for two people so that the full natural advantage of the location is retained. Covered connection with the garage required.

In designing this house, the architects were obviously restricted by the topography, there being but one level place on the site where a car would drive in. Orienting the garage, they composed the house from that spot. The exterior conforms to the general character of the surrounding country while the plan satisfies all the requirements. The abrupt drop of the terrain in the rear permitted the construction of a game room in the basement that takes full advantage of the view to the north. The walls in the living room repeat in wainscoting the wood paneling found over the fireplace. The combination living and dining room opens on three directions and large portions of the wall space have been given over to windows. Despite the gangling appearance of the plan, it is actually quite compact, with all rooms except the garage easily accessible from the entrance hall. By leaving the second floor unfinished, the cost of the house was accordingly kept down. Cost: \$4,877. Cubage: 27,700 at a little over $17\frac{1}{2}$ cents.

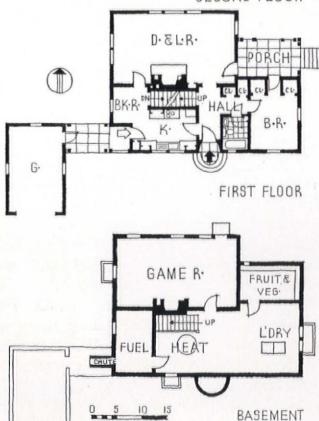
SMITH AND WELLER, ARCHITECTS



IVING ROOM



SECOND FLOOR



CONSTRUCTION OUTLINE

FOUNDATION

Walls-concrete.Cellar floor-4 in. concrete slab. Game room floor-rough shiplap floor on 2 x 2 in. sleepers, finish floor factory grade maple.

STRUCTURE

Exterior walls-2 x 4 in. stud wall, rough sheathing, building paper, 24 in. Royal Shingles, 10 in. to weather. Interior—wood lath and plaster. Interior partitions wood lath and plaster. Plastering three coats, sand finish throughout except putty coat in kitchen and bathroom. Floor construction—2 x 12 in. wood joist construction bridged once for narrow spans, twice for wide spans. Ceiling finish three-coat plaster on wood lath.

ROOF

Western red cedar shingles, $4\frac{1}{2}$ in. to the weather, laid over open sheathing; sheathing laid tight at eave line and covered with one layer of heavy building

CHIMNEY

Hard burned common brick. Fireplace facing and hearth-select common brick. Lining-12 x 12 in. terra cotta. Damper—H. W. Covert Co. SHEET METAL WORK

Flashing—Armco Tin. INSULATION

Attic floor-3 in. of Unifil. Weatherstripping-Banner. WINDOWS

Sash—double hung, Idaho white pine. Frame—Idaho white pine. Glass—quality B, Libbey-Owens-Ford. Screens—two panel screens with galvanized mesh. FLOORS

Living room—random width V groove oak flooring, Tavern grade, put down with pegs, Bruce Co. Bed-rooms—vertical grain fir. Halls—oak. Kitchen and bathrooms—wood covered with linoleum, Armstrong Cork Products Co. Porches-vertical grain fir. WOODWORK

Trim-pine in kitchen and bathroom. Knotty Idaho white pine in hall, living room, and for wainscot around living room. Ceiling beams in living room, Douglas fir. Shelving and cabinets-Idaho white pine. Doors, interior—Idaho knotty white pine made special and fir doors. Doors, exterior—main entrance door made up special of Idaho white pine. Other exterior doors and garage doors, Douglas fir.

HARDWARE

Interior and exterior-pounded black iron.

PAINTING

Walls-calcimine, kitchen and bathroom Interior: walls enameled. Ceiling—calcimine. Floors—finished with Bruce floor finish and waxed. Trim—hall and with Bruce floor finish and waxed. Irring and living room finished with Bruce floor finish and waxed. Bedroom, oil stain; kitchen trim and cupboards, enamel, W. P. Fuller Co. Sash—finished to match woodwork in each room. Exterior: Walls—I coat Concreta. Sash—3 coats paint, W. P. Fuller Co. Roof—1 coat roof stain, Jones & Dillingham.

ELECTRICAL INSTALLATION

Wiring system—BX. Switches—toggle. KITCHEN EQUIPMENT

Stove-Westinghouse, Refrigerator-Kelvinator, Sink-Crane Co. Cabinet—built to detail.

LAUNDRY EQUIPMENT

Sink—two compartment laundry tray. Washing ma-chine—Thor washer and mangle, Hurley Machine Co. BATHROOM EQUIPMENT

Lavatory. Tub-built in. Toilet, fixtures by Crane Co. PLUMBING

Pipes-wrought iron throughout.

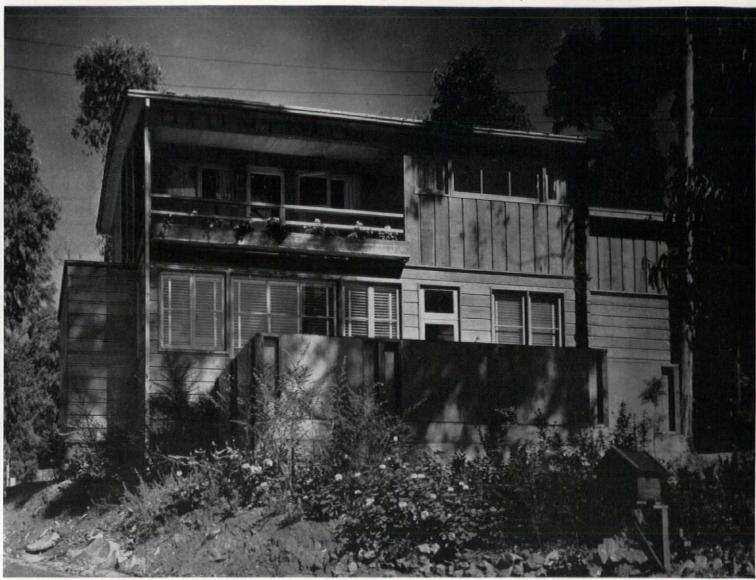
HEATING

Gravity warm air system with ducts. Hot water heater -electric.

SPECIAL EQUIPMENT

Radio outlets in living room and game room.

21. HOUSE FOR RAY BOYNTON, BERKELEY, CALIFORNIA



VIEW FROM ROAD

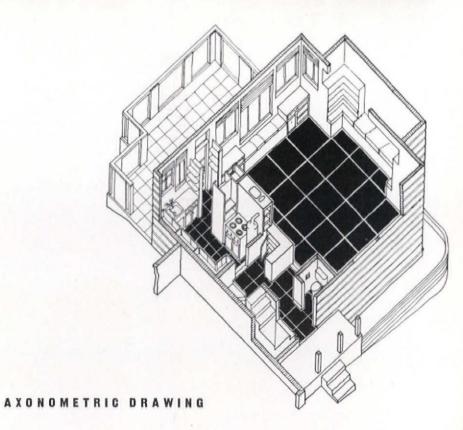
Richardson Photo

The shadow cast by a neighboring house, and the desire of the clients for a flower garden and an unrestricted view of the Golden Gate, dictated the location of this studio-type house on the corner of the lot nearest the sidewalk. This arbitrary factor was a determining influence on plan and design. Heavy traffic on the corner, together with the fact that there was only a limited view beyond, led to a concentration of window area on the open west exposure. The partially protected patio, despite its apparent proximity to the street, creates privacy. Further, its easy accessibility to the kitchen permits outdoor meals with a minimum of effort. By oiling rather than painting the exterior redwood boards of the house, the architect has achieved an aged, rustic appearance which is not only attractive in itself, but which blends well with its surroundings. Horizontal and vertical boards on the sides create an interesting surface pattern, their change of direction serving to mark the transition from the first to the upper story. The lower story windows reflect the requirements of the interior arrangement. The lack of balance in the irregular shape of the windows is not uncommon in this type of house. The interiors conform to the modern trend

MICHAEL GOODMAN, ARCHITECT



LIVING ROOM TERRACE

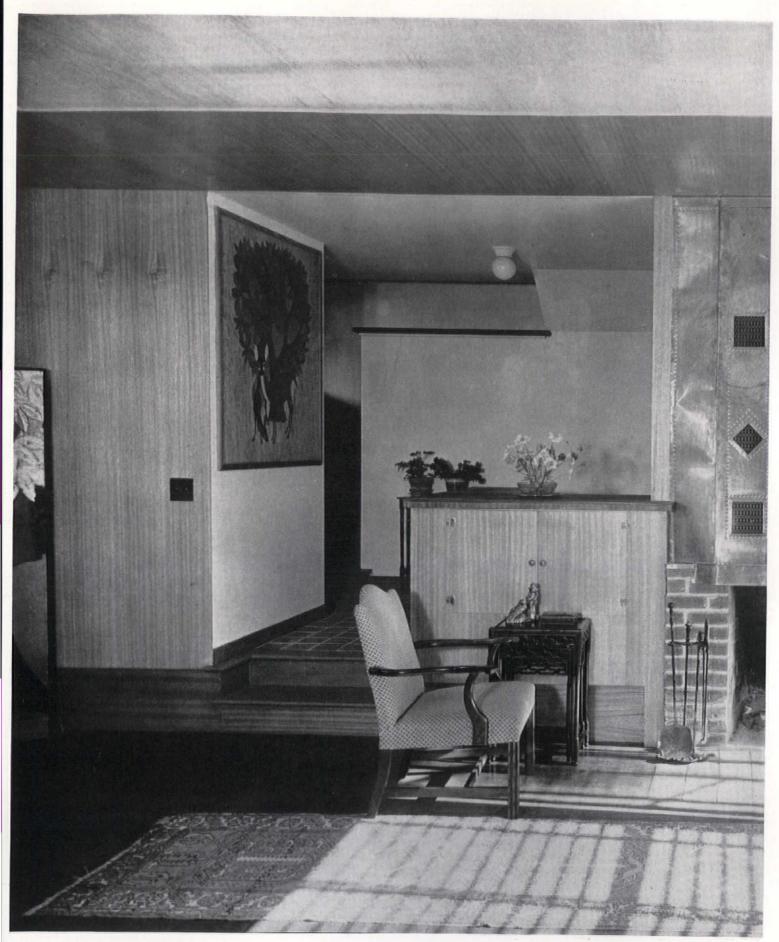


HOUSE FOR RAY BOYNTON, BERKELEY, CALIFORNIA



LIVING ROOM

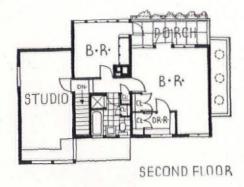
of built-in details to increase the size of the established room dimensions. The handling of the living room has been particularly smart. The floor, walls, and ceiling have been finished throughout in mahogany plywood. Lack of fenestration in the north wall has permitted use of this span for an alcove with a built-in seat. The broad, simple handling of the wall spaces, without recourse to any decorative trim, shows a thorough understanding of the material and is an additional factor in the clear cut solution of the problem. Cost: \$3,800. Cubage: 19,476 at about $19\frac{1}{2}$ cents.

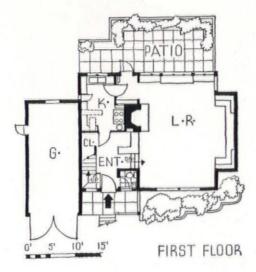


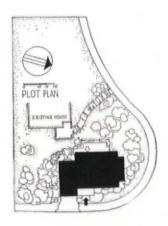
DETAIL-LIVING ROOM



SERVICE ENTRANCE AND KITCHEN







PLAN: Designed for a couple who asserted their prerogative in locating the site, the architect has made a compact two-story house that makes no provision for either servants or expansion. One interesting feature of the plan is the fact that although no specific provision has been made for a dining room, two areas lend themselves to this use: the living room and the patio. Like a good many California designs, there is no direct access from the house to the garage even though, as in this case, the garage is part of the house. The upper floor is mainly given over to sleeping quarters, both bedrooms opening out to the upper porch. A studio has been constructed over the garage and, in case of need, can be converted into a guest room. Provision has been made for a cellar but, although excavated, it has not been finished.

CONSTRUCTION OUTLINE

FOUNDATION

Walls-piers and continuous, reenforced concrete. Basement-excavated but not finished.

STRUCTURE

Exterior walls-1 in. redwood boards and battens, or rustic on double-kraft building paper on 1 in. O.P. sheathing and studding. Interior finish 1/4 in. plywood. Interior partitions—all interior finish ¼ in. plywood, either mahogany, Oregon pine or maple. Floor construction—wood Joists, double-kraft building paper on 1 in, diagonal sub-flooring, all ceilings 1/4 in, plywood.

Construction-wood joists covered with diagonal 1 in. Oregon pine sheathing. Finish—4 ply tar and gravel, Paraffine Co., Inc. Deck finish—12 oz. canvas, painted. CHIMNEY

Common brick. Lining-terra cotta 13 x 18 in. flue lining. California Clay Products Co. Damper—Miller. SHEET METAL WORK

Flashing and leaders-No. 24 gauge galvanized iron, American Rolling Mill Co. Gutters-California redwood. INSULATION

None.

WINDOWS

Sash—wood, white pine casement. Frame—redwood sills, white pine Jambs and heads. Glass—grade B, single strength, Libbey-Owens-Ford Glass Co. Calking-Hydroseal, The Paraffine Co., Inc. Venetian blinds -Ry-Lock Co.

STAIRS

Oregon pine throughout.

Living and bedrooms-1/8 in. mahogany (ribbon grain) on $\frac{1}{2}$ in. O.P. plywood in 4 x 4 ft. squares. Halls—select plain white oak, $\frac{1}{2}$ x 2 in. T. & G. Kitchen quarry tile, diamond pattern, California Tile Company. Bathrooms-vertical grain pine.

WOODWORK

kitchen cabinets Oregon pine plywood. Living room cabinets, mahogany plywood. Doors, interior—Oregon pine plywood flush doors; built-up on Job, painted. Doors, exterior—mahogany plywood front door. All others glazed Oregon pine painted. Garage doors same as interior doors.

HARDWARE

Interior-Schlage hardware throughout. Exterior-Valentine reversible hinges for all casement sash. Schlage hardware for doors.

PAINTING

Interior: walls and ceilings-mahogany and maple plywood, shellacked, sanded and waxed. Oregon pine in kitchen and baths, painted. Others stained. Floorsfilled and stained and waxed. Bath floors painted with porch and deck paint. Trim—stained. Exterior: walls rustic and boards and battens, oiled with 2 coats of boiled linseed oil. Sash-painted. All paint materials Sherwin-Williams.

ELECTRICAL INSTALLATION
Wiring system—knob and tube. Switches—General Electric flush tumbler type. Fixtures—Sears, Roebuck kitchen units in kitchen and baths. All others built-in ceiling boxes.

KITCHEN EQUIPMENT

Stove-Wedgewood gas range, James Graham Mfg. Co. Refrigerator-5 cu. ft. Coldspot, Sears, Roebuck and Co. Sink-double compartment, Standard Sanitary Mfg. Co. Washing machine-Maytag Co.

BATHROOM EQUIPMENT

Lavatory—18 x 24 in. vitreous china. Tub—5 ft. 6 in. enameled iron recess type. Toilet—vitreous china syphon jet type. All fixtures by Standard Sanitary Mfg. Co. Cabinet-built on Job.

PLUMBING

Pipes: Soil and waste-extra heavy cast iron. Ventgalvanized iron, pipes by Walworth Co. Water supplycold water, wrought iron pipe, John Byers. Hot water, copper tubing, sweat fitting, Chase Brass & Copper. HEATING

Suspended floor gas unit heaters by Payne. Hot water heater-30 gal. galvanized iron tank automatic storage, Ruud Mfg. Co.

22. HOUSE FOR R. A. McPHEETERS, HIGH POINT,



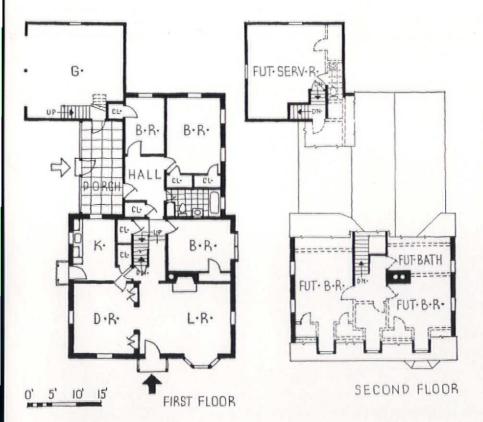
PROBLEM: House for parents and two children. Requirements: three bedrooms and bath on ground floor, possibility of two additional rooms and bath. Also, a maid's room and bath. Lot size 68 x 136 ft.

The principal concern of the architect was to satisfy the owner's requirements in room allotments. As economy of construction was an important factor, he chose local materials, handled them effectively. The interiors have been given character, with fine wood paneling and modern built-in conveniences. With the plan, the designer has vindreated his exterior, has set a good example for compact grouping. Because so many down stairs bedrooms were required, the entrance hall was eliminated, the entire living quarters concentrated in the front. The group planning of the bedrooms around the one bathroom is good. The second floor is left unfinished although space for future rooms has been earmarked. Cost: \$4,960. Cubage: 42,000 at 12 cents.

NORTH CAROLINA, ECCLES D. EVERHART, ARCHITECT



DETAIL



PLAN: The plan and layout of the kitchen is excellent. The garage, the second floor of which is laid out for future service quarters, is attached-with access via a protected porch.

CONSTRUCTION OUTLINE

FOUNDATION

Walls-exterior, continuous 9 in. brick. Interior-piers 9 x 18 in. brick. Cellar floor-4 in. concrete slab. Waterproofing-footings and concrete slab waterproofed with waterproof cement.

STRUCTURE

Exterior walls-4 in. brick veneer, sheathing, 4 in. studding. Inside—1/4 in. wallboard or pine paneling. Floor construction—sub-floor on Joists and beams with insulation board ceilings.

ROOF

Construction-2 x 8 in. Joists, sheathing, building paper. Finish—asphalt roofing, porch roof 4×4 in. exposed beams, sheathing and 3 ply built-up roof. CHIMNEY

Brick, lined with terra cotta, Covert damper in fireplace which is lined with face brick.

SHEET METAL WORK

Flashing, gutters and leaders-26 gauge galvanized metal, Lyonore, Lyon, Conklin & Co.

INSULATION

First floor ceiling of $\frac{1}{2}$ in. insulation board, except garage ceiling which has $3\frac{1}{2}$ in. rock wool, The Eagle-Picher Lead Co. Weatherstripping-exterior doors. WINDOWS

Sash—double hung 1% in. thick, basement sash, steel. Glass—double strength, quality A. Screens—wood frames for half of opening.

Oak treads, knotty pine trim.

FLOORS

Living room, bedrooms and halls-select red oak, 31/4 in. face. Kitchen and bathrooms-linoleum, Congoleum-Nairn, Inc. Porches-flagstone.

WOODWORK

Paneling in living room and hall-knotty pine, Trimknotty pine except in kitchen, bath and bedrooms where it is plain pine. Interior doors—batten 34 in. thick. Exterior doors-134 in. white pine.

HARDWARE

Interior-thumb latches, Stanley Works, Exteriorcylinder lock and black knobs, P. & F. Corbin Co.

PAINTING

Interior: Walls-3 coats of lead and oil, or stained and waxed. Ceilings-3 coats lead and oil. Floorsstained, filled, shellacked, varnished and waxed. Trimstained and waxed except kitchen and bath painted 3 coats enamel. Sash-stained or painted for interior. Exterior: Trim and sash-painted 3 coats of lead and oil. ELECTRICAL INSTALLATION

Wiring system-Romex cable. Fixtures-Chase Brass & Copper Co. KITCHEN EQUIPMENT

Sink-single drainboard, Standard Sanitary Mfg. Co. Cabinet-wood.

BATHROOM EQUIPMENT

All fixtures by Standard Sanitary Mfg. Co. Seat-Church Mfg. Co. PLUMBING

Soil and vent pipes-extra heavy cast iron. Supply pipes—copper, Mueller Co.
HEATING AND AIR CONDITIONING
Warm Air furnace with fan, filters, drip humidifier,

thermostat and various safety switches-Fox Furnace Co. Hot water heater-laundry type heater for summer and coils in furnace for winter.

23. HOUSE FOR W. H. BADGETT, COLLEGE STATION, TEXAS

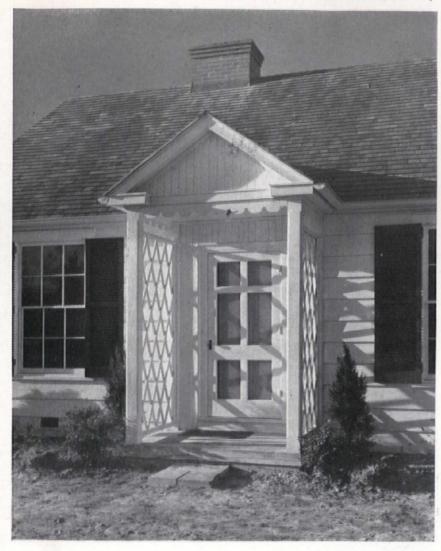


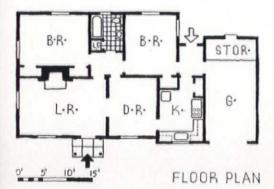
Howard Berry Photos

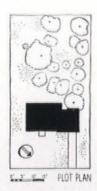
PROBLEM: House for a couple. The requirements: two bedrooms, a small dining room, an attached garage. Total cost not to exceed \$2,750.

Cost was the first consideration in the designing of this house. From the client's point of view it had to be simple and direct, not too small, yet compact and in good taste. The architects' interest was in soundness of construction, in the comfort and the convenience of the plan. The profusion of trees at the rear of the lot dictated that the house be built near the street, that the attached garage face the street. The architects designed a pleasing, simple exterior. The main entrance dominates the front, the large window areas balance the door. For a house as tiny as this, the main entrance seems a trifle ambitious. Cost: \$2,700. Cubage: 15,850 at about 17 cents.

J. COSBY BYRD AND W. H. BADGETT, ARCHITECTS







PLAN: The plan is a fine example of the utilization of all available space. Despite the small cubage, the rooms are ample. The bedrooms, on the side away from the street, are sensibly placed on either side of the bathroom. The kitchen has adequate working area. The garage opens into a small service porch which connects not only with the kitchen and the outside, but also with one of the bedrooms.

CONSTRUCTION OUTLINE

FOUNDATION

Footings-continuous concrete beam on piers.

STRUCTURE

Exterior walls-1 x 12 in. yellow pine clapboard, 15 lb. felt, 1 x 6 in. yellow pine sheathing, 2 x 4 in. studs. Inside 1 x 6 in. yellow pine sheathing, wall paper. Interior partitions—1 x 6 in. yellow pine on 2 x 4 in. studs and sheathing. Floor construction—2 x 10 in. Joists, 1 x 6 in. yellow pine laid diagonally for sub-floor, 15 lb. felt between. Ceiling-wall paper on 1 x 6 in. sheathing.

ROOF

Construction-2 x 6 in. yellow pine rafters, 1 x 4 in. nailing strips, wood shingles. Finish-No. 1 Perfection shingles.

SHEET METAL WORK

Flashing, gutters and leaders-26 gauge galvanized iron, Toncan, Republic Steel Corp.

INSULATION

None.

WINDOWS

Sash-double hung, white pine, except kitchen which has twin casements, operators on casement, Wm. Cameron & Co. Glass—double strength, Libbey-Owens-Ford Glass Co. Screens—bronze wire, white pine frames. Blinds--white pine, Wm. Cameron & Co. FLOORS

All rooms-red oak, No. 1, 1 x 3 in. Kitchen and bathcovered with inlaid linoleum, Armstrong Cork Products Co.

WALL COVERINGS

All rooms, walls and ceilings—papered, New York Wall Paper Co. Bathrooms—Masonite wainscot.

WOODWORK

Trim and cabinets-detailed white pine, Wm. Cameron & Co. Doors, interior and exterior-white pine, 6 panel Colonial. Garage doors-yellow pine, made on Job, V-Joint car siding, herring bone fashion, four doors folding and rolling on inside.

HARDWARE

Interior and exterior-forged finish, Colonial, Sargent & Co.

PAINTING

Interior: Floors-filler floor seal, 2 coats wax, Sherwin-Williams Co. Trim and sash—satin finish enamalastic, E. I. Du Pont. Exterior: Walls and sash—outside white, 3 coats, Sherwin-Williams Co.

ELECTRICAL INSTALLATION

Wiring system—knob, tube and loom. Switches— Despard type, Pass & Seymour, Inc. Fixtures—Westinghouse Electric & Mfg. Co. KITCHEN EQUIPMENT

Stove-gas, G. D. Roper Corp., Rockford, III. Refrigerator—Westinghouse Electric & Mfg. Co. Sink—Duo-strainer, Kohler Co.

BATHROOM EQUIPMENT

Lavatory, tub-recessed by Kohler Co. Toilet-T/N one piece, W. A. Case & Son Mfg. Co. Cabinet and heater-The F. H. Lawson Co., Cincinnati, O. PLUMBING

Pipes-cast iron and steel. Water supply-galvanized iron. Septic tank.

HEATING

Wood burning fireplaces and gas space heaters, Ohio Furnace & Mfg. Co. Hot water heater—De Sota automatic storage type, Ruud Mfg. Co.

24. HOUSE IN LOUISVILLE, KENTUCKY



Fischer Photos

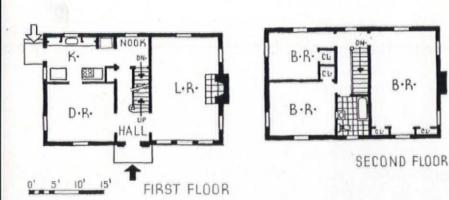
PROBLEM: House for a couple with two children.

Both in structure and plan the architect has adhered to the calm dignity and balance of the early Colonial. With brick veneered walls painted to match the white trim, the center of interest is the carefully detailed doorway, surmounted by a broken pediment. The blinds are green. Further interest is focused on the entrance by the shrubbery which might well have been continued around the sides of the house. The handling of the interiors has been clean and direct. This house is one of 350 small houses designed by this architect during the last three years. In no case has he used an identical plan. The exteriors have been varied by using new brick in lieu of old, different types of front entrances and cornices, additions of side porches, etc. Cost: \$4,750. Cubage: 22,200 at a little over 21 cents.

EDGAR W. ARCHER, ARCHITECT



KITCHEN-DINING ALCOVE



PLAN: The plan is conventional, the sole innovation being the small allotment of space for a breakfast nook near the kitchen. Access from the master's bedroom to the bath is inconvenient. Including a full basement, part of which is converted into a one-car garage, the living portions of the room provide ample room for the family.

CONSTRUCTION OUTLINE

FOUNDATION

Walls-10 in. concrete. Cellar floor-4 in. concrete. Waterproofing-Speed's waterproof cement for floors. STRUCTURE

Exterior walls—4 in. brick veneer, 1 in. air space, Sisalkraft paper, 2 x 4 in. studs. Inside rock lath and plaster. Interior partitions—studding, rock lath, patent plaster, U. S. Gypsum Co. Floor construction-2 x 10 in. wooden Joists, 16 in. o. c., plaster ceiling. Attic floor-2 x 6 in. wooden joists and plaster ceiling.

Construction-wooden rafters, covered with composition shingles on sheathing, Philip Carey Co.

CHIMNEY

Lining-12 x 12 in. terra cotta. Fireplace-patent damper.

SHEET METAL WORK

Flashing, gutters and leaders-galvanized iron.

INSULATION

Outside walls—rock lath, U. S. Gypsum Co. Attic floor—Celotex. Weatherstripping—copper.

Sash-wood double hung, mill built, Brickley Lumber Co. Basement, metal casement. Glass—quality A, double-strength, Pittsburgh Plate Glass Co. Screens— Vista, frame stationary. Blinds-mill made. STAIRS

All sap gum, select.

FLOOR

Living room and halls—oak, $1\%_6 \times 3\%_4$ in. ship deck. Kitchen and bedrooms—oak, $5\%_6 \times 1\%_3$ in., kitchen linoleum covered. Bathrooms—tile, hexagon 1 in. square. Porches-concrete.

WALL COVERINGS

Bedroom and halls-wall paper. Bathrooms-tile wainscot.

HARDWARE

Interior and Exterior-dull brass, Belknap.

PAINTING

Interior: Walls and ceilings-unpainted. Floors-filled, stained and shellacked. Trim, Doors and Sash-3 coats enamel, E. I. Du Pont. Exterior: Walls-3 coats white lead, sash and trim-3 coats white enamel, Cabot's Virginia paint.

ELECTRICAL INSTALLATION

Wiring system-BX cable and conduit. Switches-Bryant Electric Co. Fixtures-direct, Chase Brass & Copper Co.

KITCHEN EQUIPMENT

Sink-Crane Co. Cabinet-wood, mill made.

BATHROOM EQUIPMENT

Fixtures-Crane Co. Cabinet-Fairfacts Co.

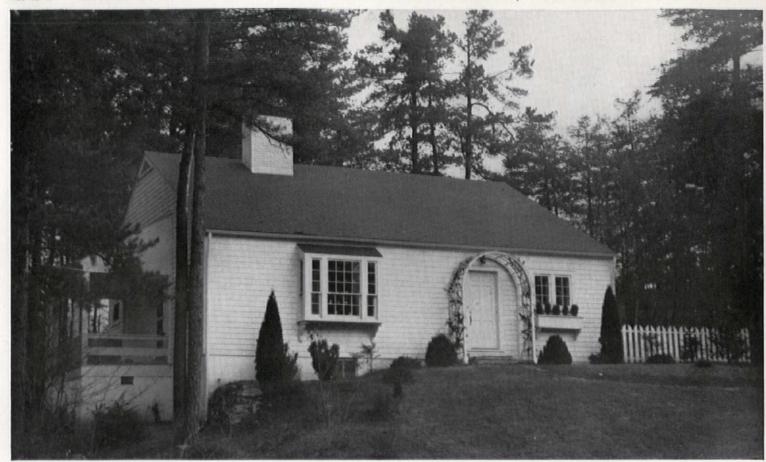
PLUMBING

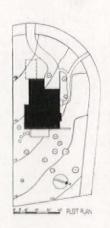
Pipes-galvanized iron throughout.

HEATING

One pipe steam, coal fired boiler. Thermostat-Minneapolis-Honeywell. Hot water heater-Ruud Mfg. Co.

25. HOUSE FOR MRS. EVELYN HATFIELD, WINSTON-SALEM,

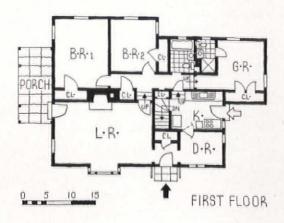




PROBLEM: A one-story house, suggesting Cape Cod antecedents, and providing bedrooms for the owner, her daughter, and a guest.

The requirements given by the owner were effectively solved, particularly in the matter of style, which suggests a Cape Cod ancestry without slavish adherence to precedent. The lines are simple and the scale of the house is intimate without any suggestion of deliberate picturesqueness. The living room bay, attractively treated on the interior, might have been enlarged better to light the room and to improve the facade. The porch, which opens off the living room, is noteworthy for the broad handling of its details and its pleasant proportions. Cost: \$4,144. Cubage: 19,388 at 21 cents.

NORTH CAROLINA, LUTHER LASHMIT, ARCHITECT



UNEXCAVATED UNEX-UNEX. L'DRY. & HEAT. COAL -UP BASEMENT

PLAN: Two-way circulation from front door to bedroom; compactly placed plumbing. Crossventilation in all main rooms. Fireplace well located for furnishing. Ample closet space.



Johnston & Johnston

DETAIL

CONSTRUCTION OUTLINE

FOUNDATION

Walls-local common brick, concrete footings. Cellar floor-concrete furnace platform, hard clay elsewhere. STRUCTURE

Exterior walls—N. C. pine studs, sawn red cedar shingles, black building paper and wood sheathing. Inside Sheetrock and 3 coats patent cement plaster, U. S. Gypsum Co. Interior partitions—N. C. pine studs, Sheetrock, patent cement plaster. Floor construction-N. C. pine Joists, subflooring, paper. ROOF

Construction-N. C. pine rafters, sheathing and felt. Finish-asphalt strip shingles, Bird & Son.

Lining-terra cotta. Fireplace-damper, H. W. Covert Co.

SHEET METAL WORK

Flashing, gutters and leaders—iron-copper alloy. WINDOWS

Sash-pine, stock double hung and casements. Glassquality A, single thick, Libbey-Owens-Ford Glass Co. Screens-pine frames, black wire, 1/2 screens, sliding. FLOORS

Living room, bedrooms and halls-2nd quality red oak. Kitchen and bathrooms-pine covered with linoleum, Armstrong Cork Products Co. Porches-rift pine.

WALL COVERINGS

Living room—wall paper and knotty pine paneling on fireplace wall. Bedrooms and halls—wall paper. Kitchen Sanitas, Standard Textile Products Co. Bathroomsplaster and Masonite Temprtile, Masonite Corp. WOODWORK

Trim—poplar and knotty pine. Shelving, cabinets and interior doors—white pine. Doors, exterior—yellow pine, weatherstripped.

HARDWARE

Interior—mortise lever and tumbler locks, black cast metal trimmings. Exterior—cylinder mortise locks, black cast metal trimmings.

PAINTING

Interior: Floors-stain shellac and wax. Trim and sash -shellac and wax and 3 coats lead and oil. Exterior: Walls and sash-3 coats Cabot's Old Virginia white. ELECTRICAL INSTALLATION

Wiring system-non-metallic cable, Romex. Switchesflush tumbler.

KITCHEN EQUIPMENT

Stove—electric, Tappan Stove Co. Refrigerator—electric, General Electric Co. Sink—roll-edge enameled iron set in counter top, Kohler Co.

BATHROOM EQUIPMENT

All fixtures by Kohler Co. Shower-enameled steel, Weis Mfg. Co.

PLUMBING

Pipes: Soil, waste and vent-cast iron, standard weight. Water supply-wrought iron. Galvanized iron hot water storage tank.

HEATING

Gravity warm air. Boiler-Holland Furnace Co. Fuelcoal, hand-fired. Hot water heater-laundry stove with coil for summer, coil in furnace for winter.

26. HOUSE FOR HELEN CLARKE, MADISON, WISCONSIN



PROBLEM: Servantless house for a single lady. One guest room.

The exterior is a straightforward expression of the plan which because of the sharply sloping site concentrates the living quarters on the second floor. The sheltered terrace is an agreeable feature. The corner windows offer adequate ventilation, contribute to furniture grouping and make the most of the view which overlooks a lake. The owner's antique American furniture finds a sympathetic background in the knotty pine interiors. The plan works admirably and wastes no space. Cost: \$4,900.

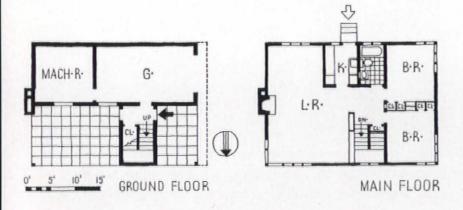
PLANNING ASSOCIATES, ARCHITECTS



LIVING ROOM



LIVING ROOM



CONSTRUCTION OUTLINE

FOUNDATION

Walls—8 in. concrete (plywood forms). Cellar floor—concrete on 4 in. gravel fill. Waterproofing—10 per cent hydrated lime in cement.

STRUCTURE Exterior walls—clapboards, $\frac{1}{2}$ in. Masonite, wooden studs. Inside $\frac{1}{2}$ in. Masonite and either knotty pine boards or $\frac{1}{4}$ in. plywood. Interior partitions—2 x 4 in. with either pine boards or Masonite and plywood. Floor construction—2 x 10 in. and sub-floor (no ceiling finish in basement). Ceilings—covered with Red Top acoustic tile, U. S. Gypsum Co.

ROOF

Construction—wood Joists and sheathing. Finish—4-ply built-up asphalt.

CHIMNEY

Lining—terra cotta. Fireplace—damper, Type E, Colonial.

SHEET METAL WORK

Flashing—26 gauge galvanized iron. Leaders—standard cast iron inside.

INSULATION

Outside walls—½ in. Masonite. Roof—4 in. Gimco rock wool, General Insulating & Mfg. Co. Weatherstripping—spring bronze throughout.

WINDOWS

Sash—wood casement. Glass—quality A, Lustraglass, American Window Glass Co. Screens—wood frames. STAIRS

Red oak treads, other parts birch.

FLOORS

All rooms wood. Kitchen and bath—linoleum covered. Porches—native flagstone.

WALL COVERINGS

Knotty pine in living room, plywood for the rest. DOORS

Interior—pine and plywood. Exterior—single panel pine. Garage doors—slab type, pine.

PAINTING

Interior: Kitchen and bath—enamel. Paneling—waxed, plywood sanded and waxed. Floors—Dura-seal, International Chemical Co., Chicago. Exterior: Oil, paint on wood, cement paint on concrete.

ELECTRICAL INSTALLATION

Wiring system—rigid conduit where exposed, flexible within wall. Switches—Harvey Hubbell.

KITCHEN EQUIPMENT

Stove—TVA model, General Electric. Sink—Corland, Crane Co. Cabinet—wood, built to design.

BATHROOM EQUIPMENT

Fixtures-Crane Co.

PLUMBING

Pipes-standard cast iron. Water supply-galvanized iron.

HEATING AND AIR CONDITIONING

Warm air, humidifier, circulating fan, Lennox Furnace Co. Boiler—equipped with oil burner, Fiore Coal & Oil Co., Madison, Wis. Hot water heater—electric 40 gal. storage type water heater, General Electric Co.

27. HOUSE FOR DR. HAROLD REESE, RICHLAND CENTER,



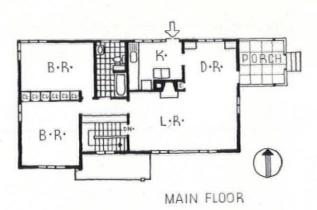
PROBLEM: Servantless house for a couple. Facilities for entertainment and a porch required.

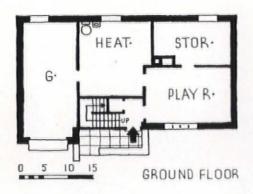
Here again as in House 26, the architects have recognized the sloping site by placing the living quarters on the upper floor. The dining space is clearly defined yet lends a fine sense of space to the living room. The recreation room on the lower floor permits entertainment of guests without interfering with the privacy of the quarters above. The entry is inviting and as consistently simple as the entire clapboard exterior. Inside and out the house achieves distinction through its complete lack of ostentation or mannerisms. Cost: \$4,500 exclusive of painting. Cubage: 20,500 at 22 cents.

WISCONSIN, PLANNING ASSOCIATES, ARCHITECTS



ENTRANCE





CONSTRUCTION OUTLINE

FOUNDATION

Walls-Continuous 16 in, native stone. Cellar floorconcrete slab. Waterproofing-walls below grade pointed and tarred.

STRUCTURE

Exterior walls-clapboards on typical wood frame construction. Inside $\frac{1}{2}$ in. Red Top shiplapped, metal-reenforced insulating lath, U. S. Gypsum Co. Interior partitions—2 x 4 in. studs with plaster and plaster base as above, Keene's cement in kitchen and bath. Floor construction-2 x 10 in. Joists, plaster on ceilings.

ROOF

Construction-wood Joists, sheathing. Finish-4-ply built-up asphalt.

CHIMNEY

Lining—terra cotta. Fireplace—type E, Colonial damper. SHEET METAL WORK

Flashing-26 gauge galvanized iron. Leaders-standard weight cast iron inside.

INSULATION

Outside walls-insulating lath, Roof-4 in, Red Top insulating wool, U. S. Gypsum Co. Weatherstripping-Spring bronze on windows.

WINDOWS

Sash-white pine casement, single light. Glass-quality A double strength, Lustraglass, American Window Glass Co. Screens—11/8 in. wood frame, 16 mesh pearl wire fabric.

STAIRS

Red oak treads and platforms, other parts birch.

FLOOR

All rooms % in. red oak except bathroom which has tile, kitchen floor covered with linoleum.

WOODWORK

Shelving and cabinets-1 in. faces and frames, 1/4 in. plywood sides and backs, shelves 1 in. pine, doors 3/4 in. plywood. Doors, interior-single panel white pine. Doors, exterior—slab, white pine. Garage doors—one piece overhead, white pine stiles and rails and fir panels.

PAINTING

Not included in cost.

ELECTRICAL INSTALLATION

Wiring system—rigid conduit where exposed, flexible within walls. Switches—Harvey Hubbell.

PLUMBING FIXTURES

Kitchen sink, bathroom, lavatory, tub and toilet, all by Kohler Co.

PLUMBING

Pipes-standard cast iron. Water supply-galvanized

HEATING AND AIR CONDITIONING

Hot air—circulating fan, drip humidifier, thermostat— Lennox Furnace Co. Boiler—equipped with oil burner. Hot water heater-kerosene.

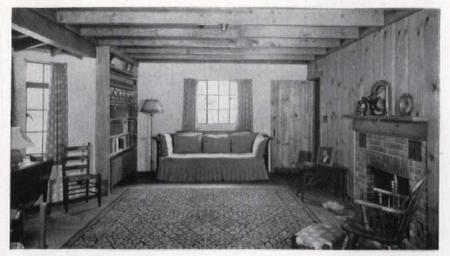
28. HOUSE FOR CAMPBELL CLARENDON, TAPPAN, N. Y.



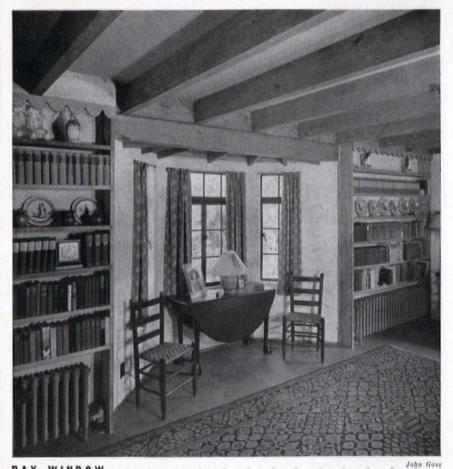
Courtesy, Portland Cement Assn.

Built, both inside and out, of concrete cinder blocks, every bit of material and construction of this distinctive little house is modern. The paneled and cinder block interiors repeat the virile personality of the facade. The living room, largest room in the house, further increases its own size with wide built-in book cases, boasts a fireplace with a simple wood mantel. With three large bedrooms, and an attached garage, the home offers every provision for the comfort of two or three people who prefer living in a quiet modest way. The garage is attached although no direct or protected access to the house has been provided. The presence of a large bedroom on the first floor—which can be completely cut off from the rest of the house—makes an ideal guest room. The large amount of space devoted to storage on the second floor should prove useful. Cost: \$4,200. Cubage: 13,780 at 30½ cents.

FRANK HARPER BISSELL, ARCHITECT

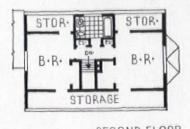


LIVING ROOM



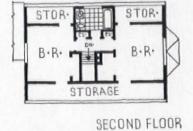
BAY WINDOW

G.



5' 10' 15' FIRST FLOOR

B.R



CONSTRUCTION OUTLINE

FOUNDATION

Walls-concrete blocks on concrete footings. Cellar floor-concrete on cinder fill.

STRUCTURE

Exterior walls-cinder blocks. Interior partitionssame. Floor construction-precast concrete Joists and slabs. Second floor-3 x 8 in. wood Joists, left exposed. ROOF

Construction-2 x 6 in. wood Joists and sheathing. Finish-asphalt slate surface shingles.

CHIMNEY

Brick, terra cotta flue lining, patent throat damper. SHEET METAL WORK

Roof of bay window and flashing-copper.

INSULATION

Rock wool between rafters. WINDOWS

Steel casements-Detroit Steel Products Co. Glassquality B, double thick. Screens-rolling copper. STAIRS Oak treads, pine risers.

FLOOR

Living room-white oak. Bedrooms and halls-N. C. pine. Kitchen and bathrooms-linoleum.

WALL FINISH
Living room—knotty pine paneling, all other walls
painted with Medusa white, Portland cement paint. WOODWORK

White pine throughout.

HARDWARE

Interior and exterior-hand wrought iron.

ELECTRICAL INSTALLATION
Wiring system—BX. Switches—push button.
KITCHEN EQUIPMENT

Stove and refrigerator-electric. Sink-Standard Sanitary Mfg. Co.

BATHROOM EQUIPMENT

All fixtures by Standard Sanitary Mfg. Co.

PLUMBING

Pipes: soil, cast iron; supply, brass.

HEATING

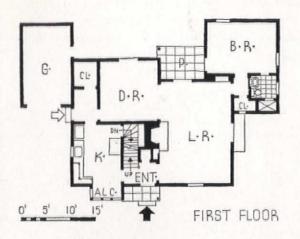
Steam. Boiler, radiators and valves-American Radiator Co. Oil burner-Timken. Gas fired hot water heater.

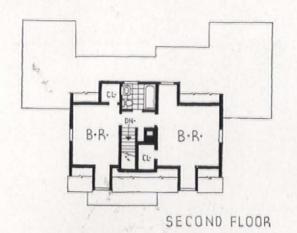
29. HOUSE FOR FRED YOUNG, SAN MARINO, CALIFORNIA



Fairly typical in its modified Colonial form, this West Coast house aspires to individuality by the projection of its kitchen to form, with the entrance, an important element in the exterior design. The only unusual requirement given by the owner, who shares the house with his widowed sister and her son, was that his bedroom be given a separate entrance so that he would not have to go through the living room if guests were being entertained. Contrary to customary landscaping practice the shrubbery was placed away from the house and massed against a picket fence, improving the appearance of the property as well as giving the occupants a certain amount of privacy. The interiors are more conventional in treatment. The house is situated on a lot 66 x 135 ft. Cost: exclusive of architect's fee \$5,000. Cubage: 20,632 at 24 cents.

ARTHUR KELLY AND JOE ESTEP, ARCHITECTS





PLAN: The use of an open plan does much to increase the spaciousness of the living quarters. Garage and service entrance well located, with the kitchen conveniently close to the front door.





CONSTRUCTION OUTLINE

FOUNDATION

Walls-continuous concrete, Cellar floor-cement, Waterproofing-Anti-Hydro in front wall of cellar. STRUCTURE

Exterior walls-Underpinning and Joists-Wolmanized, American Lumber and Treating Co. 2 x 4 in. Oregon pine stud wall with redwood siding on exterior and interior lath and plaster. Interior partitions—wooden stud and plaster, some partitions studs and 1 in. boards. Floor construction—first floor, 2×8 in. Joists. Second floor— 2×10 and 2×12 in. Joists, plastered ceilings.

Construction-wood. Finish-Royal western red cedar shingles.

CHIMNEY

Common brick. Lining-terra cotta, wire cut brick fireplace face. Firebrick in fire box.

SHEET METAL WORK

Flashing, gutters and leaders-Toncan metal, 26 gauge, Republic Steel Corp.

Armstrong Temlock insulating board on exterior walls and second floor ceiling.

WINDOWS

Double hung and casement, made of sugar pine. Frame-vertical grained Oregon pine. Glass-single strength, Libbey-Owens-Ford Glass Co. Screens-14 mesh bronze wire in sugar pine frames. Blinds—11/8 in. movable slat shutters made of sugar pine.

Oak treads, vertical grained Oregon pine risers and stringers.

FLOORS

Living room, bedrooms and halls-oak. Kitchen-linoleum cemented to oak floor. Bathrooms-tile. Porches-

WALL COVERINGS

Living room and halls-wood paneling and plaster. Bedrooms-wall paper. Kitchen-Sanitas. Bathrooms-Sanitas and tile wainscot.

WOODWORK

Trim, shelving and doors, interior-vertical grained Oregon pine. Exterior doors and garage doors-vertical grained sugar pine. HARDWARE

Colonial brass throughout.

PAINTING

Interior: Ceilings-tinted. Floors-stained and waxed. Trim and sash—4 coats enameled with glaze coat. Exterior: Walls and sash—3 coats lead and oil paint. ELECTRICAL INSTALLATION

Wiring system-rigid conduit and switches, General

Electric. Fixtures-specially designed. KITCHEN EQUIPMENT Stove-gas. Refrigerator-Electrolux, gas. Sink-acid

resisting enamel iron, Standard Sanitary Mfg, Co. BATHROOM EQUIPMENT

All fixtures by Standard Sanitary Mfg. Co.

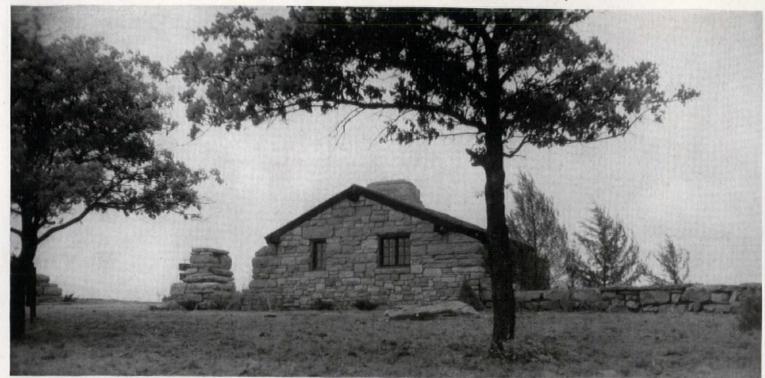
PLUMBING

Pipes-soil, cast iron; vents and supply-genuine wrought iron.

HEATING

Warm air unit heating systems, gas fired and controlled by pilot light and push button. Hot water heater-Superbo Mfg. Co.

30. CARETAKER'S LODGE, PERRY LAKE PARK,



Enright

PROBLEM: To design a caretaker's lodge in a park area. The lodge must emphasize both the park entrance and afford commanding views south and east. It must be oriented to take advantage of a cool southern breeze in summer yet be sheltered from road traffic and the cold northern blasts in winter.

A specialist in park design, the architect chose a rustic motif, fitted it well into the natural scenery. The lodge is composed of indigenous quarry faced stone block walls, a common board roof. The low chimney, hugging the roof, is of fieldstone. The construction was kept as crude as possible, the exposed beams lending vigor to the interior. Two piers—of the same faced stone as the walls—were built beside the lodge to mark the entrance to the park. To alleviate the winter winds, a row of trees was planted on the north side of the shelter. The lodge was constructed by CCC labor. Cost: \$2,750.

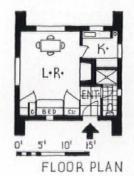
PERRY, OKLAHOMA, CLIFFORD W. MACCOY, ARCHITECT



ENTRANCE



DETAIL



PLAN: Any criticism of the plan would be superfluous yet the fact remains, from the entrance on the road side to the details in the kitchen, there has been no loss of usable space.

CONSTRUCTION OUTLINE

FOUNDATION

Walls-native stone.

STRUCTURE

Exterior walls-native masonry, solid wall. Quarry faced exterior, hammer dressed interior. Interior partitions—V'd butt Joint plank. Ceiling—all open beam, solid sheathing. ROOF

Construction-6 x 8 in. Douglas fir rafters, 1 in. shiplap No. 2 yellow pine. Finish—common shingles 18 in. CHIMNEY

Field stone. Firebox lined with fire brick, flue plastered with cement mortar.

SHEET METAL WORK

Flashing—14 oz. copper. INSULATION

None.

WINDOWS

Sash—wood casements. Glass—double strength, Pitts-burgh Plate Glass Co.

FLOORS

Living room—random No. 2 yellow pine plank. Halls—flagging. Kitchen—random width No. 2 yellow pine plank. Bathrooms—cement. WOODWORK

Trim, cabinets and doors-random width No. 2 yellow pine plank. HARDWARE

Interior and exterior-hand wrought iron.

Interior: Walls and floors—hot boiled linseed oil. Ceilings and sash—asphalt diluted with gasoline. Ex-terior: Walls, roof and sash—diluted asphalt, 3 coats. KITCHEN EQUIPMENT

Stove-coal and wood. Sink-Standard Sanitary Mfg.

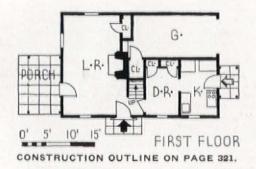
Co. BATHROOM EQUIPMENT

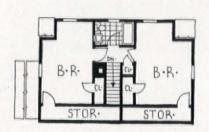
Toilet-Standard Sanitary Mfg. Co.

Soil pipes—4 in. cast iron. Water supply—1 in. galvanized iron. Kerosene hot water heater and tank.

31-35. HOUSES FOR WEST VIRGINIA COAL LAND CO.







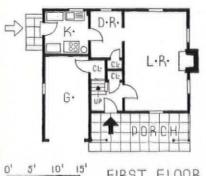
SECOND FLOOR Cost: \$4,700. Cubage: 15,348 at 30½ cents.



KANAWHA CITY, W. VA., WARNE, TUCKER AND SILLING, ARCHITECTS



Bollinger



0' 5' 10' 15' FIRST FLOOR



SECOND FLOOR

Cost: \$4,820. Cubage: 15,860 at 30 cents.

An enterprising and public-spirited banker was convinced by the architects that capital invested in houses would bring a twofold return—direct profit and indirect local business stimulation. The houses were offered on a 10 per cent above cost basis, this representing the down payment with the balance payable in monthly installments competitive with neighboring properties. The results exceeded anticipation. The houses were all sold upon completion and proved to be the primer which set off a local construction boom, proof again that in many U.S. communities today there exists a potent demand



Bollinger



FIRST FLOOR SECOND FLOOR Cost: \$4,725. Cubage: 15,536 at 30½ cents.

for well-built, well-designed, low cost houses. Although many of the houses which followed ranged around the \$10,000 figure and eight or ten exceeding even \$15,000, all of the houses shown here are in the under \$5,000 class. Eight in all, five basic plans were used, three repeated, a factor that played its part in keeping the final cost below the established price limit. While all are similar in construction and appearance, the architects sufficiently varied the exteriors to satisfy even the most individualistic prospective owner. One house was given a gambrel roof, another sports a pedimented doorway. By



Bollinger



CONSTRUCTION OUTLINE ON PAGE 321

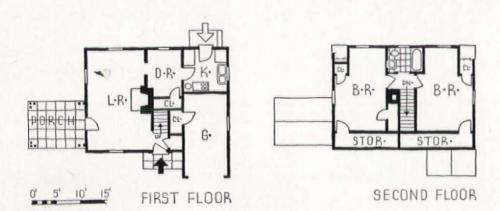
arbitrarily changing the location of the dormers and chimneys, porches and doors, the architects have been able to retain a consistent character without monotonous repetition. The plans show greatly modified treatment of the ground floors. In several, the entrance hall was omitted entirely, in others a small one was provided. One house finds the dining room running into the living room, another separates the two with a front hall. In all but one case the garage has been placed in front, in three out of five the black-topped chimney has been set in the side wall, twice in the center.

APRIL · 1936

HOUSE FOR WEST VIRGINIA COAL LAND CO., KANAWHA CITY, W. VA.



Bollinger



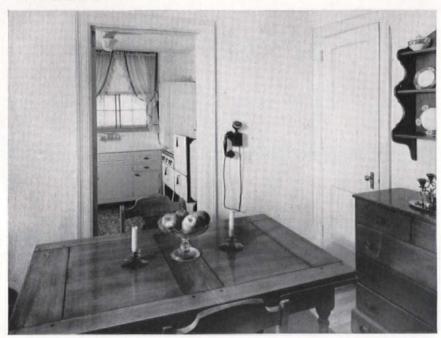
Cost: \$4,710. Cubage: 14,855 at 311/2 cents.

In all cases the first floor has provided the same number of rooms, the same approximate amount of floor area. The second floor plans are very similar, only one showing more than two bedrooms. Grouping of these houses around a central landscaped court with the backs of the houses facing the street suggests a further desirable feature if this plan is repeated. In price the houses range from \$4,610 to \$4,820. In cubage area from 14,855 to 15,860 at a cost of from 30 to 31 cents.

CONSTRUCTION OUTLINE ON PAGE 321



LIVING ROOM



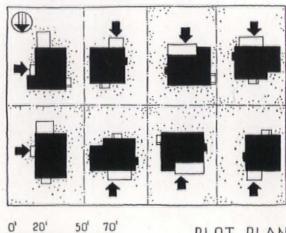
DINING ROOM



KITCHEN

Bollinger Photos

THREE TYPICAL INTERIORS



PLOT PLAN

CONSTRUCTION OUTLINE

FOUNDATION

Walls-continuous wall of load bearing tile on concrete footing.

STRUCTURE

Exterior walls-2 x 4 in. studs, 16 in. o.c., 7/8 in. sheathing, building paper, wood siding or wood shingles. Inside-Rocklath plaster base and 34 in. plaster, hard white finish. Interior partitions—2 \times 4 in. studs 16 in. o.c., Rocklath plaster base and $\frac{3}{4}$ in. plaster both sides. Floor construction—2 \times 10 in., 16 in. o.c., $\frac{7}{8}$ in. oak sub-floor.

ROOF

Construction-wood rafters, 2 x 6 in., 16 in. o.c., % in. wood sheathing, felt paper. Finish-wood shingles.

CHIMNEY

Common brick with terra cotta flue linings, steel throat and damper, fire brick fireplace lining, brick hearth and facing with stock Colonial mantel. SHEET METAL WORK

Flashing-tin. Gutters and leaders-galvanized iron.

INSULATION

Roof-2 in. rock wool.

WINDOWS

Wood, double hung. Glass-quality A, double strength, Libbey-Owens-Ford Glass Co. Blinds-wood.

STAIRS

Pine stringers, oak treads, gum risers.

FLOORS

All rooms-first quality red oak except bathroom which has tile floor and base. Porches-cement and tile.

WOODWORK

Trim-gum. Shelving and cabinets-poplar. Doorswhite pine. Garage doors-white pine, overhead and side hinged.

HARDWARE

Interior-Colonial brass; exterior-Swedish iron, P. & F. Corbin Co.

PAINTING

Interior floors—filler, 2 coats varnish and wax. Trim and sash—5 coats enamel, Ripolin, Glidden Co. Exterior walls—2 coats double white. Roof—Creosote stain. Sash— 3 coats double white, all exterior paint by Samuel Cabot, Inc.

ELECTRICAL INSTALLATION

Wiring system-BX. Switches-Despard, Pass & Sey-

mour, Inc. KITCHEN EQUIPMENT

Sink-cabinet type, Crane Co.

BATHROOM EQUIPMENT

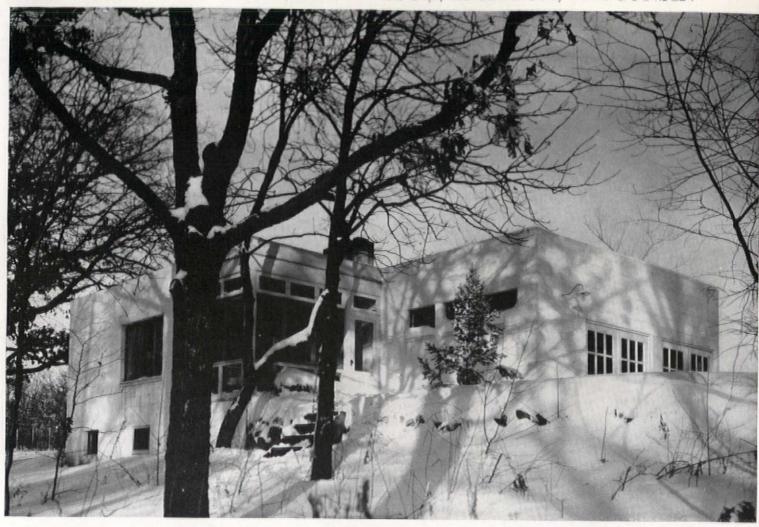
All fixtures by Crane Co. Medicine cabinet-Corcoran, Fries & Son Steel Construction and Engineering Co. PLUMBING

Soil and waste-cast iron, galvanized iron vents and 87 per cent brass for supply.

HEATING

Unit gas heaters. Hot water heater-tank with thermostatic controlled coil heater, gas fired.

36. HOUSE FOR HAMILTON BEATTY, MADISON, WISCONSIN



PROBLEM: A house for parents and two children, No service quarters.

The Wisconsin landscape, hospitable to the modern trend in architecture, lends itself admirably to this rugged, individualistic house near Madison. Attacking their problem in the contemporary manner, the designers chose concrete block walls, large unbroken window areas and a flat roof. The location of the house—several miles from town—required the construction of a two-car garage. To take advantage of a view through the woods to a lake below, the designers oriented the living room in that direction, concentrated the window area there. Space was saved by the use of built-in details. Cost: \$4,100.

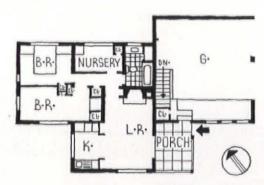
HAMILTON AND GWENYDD BEATTY, DESIGNERS



NORTH



KITCHEN



FLOOR PLAN

PLAN: Compact and complete, the plan is simplified by the omission of a dining room. The inconvenience attached to going through the garage to get to the heater in the basement is moderated by the covered porch. But having the entrance into the living room from the front door, without benefit of a hall in which to remove heavy or wet clothing, is doubtful practice in cold Wisconsin.



CONSTRUCTION OUTLINE

FOUNDATION

Walls-8 in. poured concrete with 12 in. footings. Cellar floor-4 in. concrete on gravel soil. Waterproofing-10 per cent hydrated lime in concrete.

STRUCTURE

Exterior walls-8 in. slag concrete blocks, cement paint outside, 3 coats plaster inside (putty finish). Interior partitions-wooden frame, 1/2 in. Insulite plaster base, 3 coats plaster. Floor construction-wood joists, subflooring (shiplap) and paper.

ROOF

Construction-wood Joists, shiplap and paper ceiling 1/2 in. Insulite plaster base, 3 coats plaster. Finish-5-ply built-up asphalt and felt roofing.

CHIMNEY

Local sand lime brick, cement paint. Lining-terra cotta. Fireplace—Colonial damper, 42 in. SHEET METAL WORK

Flashing-24 gauge galvanized iron. Leaders-3 in. steel pipe inside.

INSULATION

Roof-air space and 1/2 in. Insulite. Weatherstrippingfelt at all windows.

WINDOWS

Sash-metal casements, Truscon Steel Co. Glassquality A, double strength, American Window Glass Co. Screens—roll-screens, Truscon Steel Co.

All rooms, select oak except bath which is tile.

WOODWORK

Trim and cabinets-pine. Doors, interior-single panel pine. Garage doors-stock pine.

HARDWARE

Throughout-Sargent & Co.

PAINTING

Interior: Walls, trim and sash—flat finish paint, Mautz Paint & Varnish Co., Madison, Wis. Floor—Dura-seal, International Chemical Co., Chicago. Exterior: Walls— Medusa White Portland Cement Paint and yearly application of whitewash. Roof-whitewash every spring for summer cooling—disappears by winter. Sash—oil paint. ELECTRICAL INSTALLATION

Switches-General Electric. Fixtures-special design, built-in.

KITCHEN EQUIPMENT

Stove and refrigerator-General Electric. Sink-Rundle-Spence Mfg. Co., Milwaukee. LAUNDRY EQUIPMENT

Washing Machine-Kenmore, Sears, Roebuck and Co. BATHROOM EQUIPMENT

Lavatory and tub-Kohler & Co. Toilet-Crane Co., flush valve, Sloane-Blabon Corp.

PLUMBING

Pipes-cast iron. Water supply-galvanized iron. Pump -260 gal. per hour capacity, Crane Co.

HEATING

Furnace—Schwab Furnace & Mfg. Co., Milwaukee, Wis. Oil burner—Wisconsin Oil Burner Co.

37. HOUSE FOR PRUNELLA WOOD, COCONUT GROVE,



Richard Holt Photos

An excellent and individual handling of wood construction. The essential quality of wood, particularly as used in warm climates, is well indicated by the use of plank siding, the shallow window reveals, by the avoidance of a heavy member at the eaves, and by the slight but sharp projection of the siding over the foundation wall. This quality, perhaps best expressed as thinness, is consistently echoed in the use of light section steel casements. The interiors, also finished in wood, have the same character as the exterior. While the house shows a less intimate relationship with the out of doors than might be expected in so mild a climate, it will be seen from the plan that a large screened porch is provided for outdoor living. The strange piece of apparatus on the roof of the wing which looks like a skylight is a solar heating unit, used for providing domestic hot water. A large number of glass lenses catch and direct the sun's rays to a heat absorbing unit. The water warmed there is stored in a storage tank until wanted. The cost of the house was \$4,150. Cubage: 18,500 at 22½ cents.

FLORIDA, MARION I. MANLEY, ARCHITECT



EARVIEW



LIVINGROOM



BEDROOM



PLAN: Well arranged for informal living. Large openings between living room and porch permit the use of these spaces as one integrated room. Through or corner ventilation provided in all main rooms.

CONSTRUCTION OUTLINE

FOUNDATION

Walls-continuous, concrete block on concrete footings. STRUCTURE

Exterior walls-4 x 4 in. studs with 2 in. plank, T. & G., cypress siding, cypress wall paneling on skeleton con-struction, except kitchen and baths which have lath and plaster. Interior partitions-all cypress framing 2 x 4 and 4 x 4 in. with cypress both sides. Floor construction-2 x 8 in. beams, 2 in. random width pine planks set up in white lead. Ceilings-random width cypress planks.

ROOF

Construction-2 x 6 in. rafters. Finish-prime cypress shingles on shingle strips.

CHIMNEY

Concrete brick and red brick with terra cotta flue lining, Fireplace of fire brick.
SHEET METAL WORK

Flashing-copper, 16 oz.

WINDOWS

Sash—steel casements, Crittall Mfg. Co. Glass—double strength, Pittsburgh Plate Glass Co. Screens—metal frames, bronze 18 wire mesh. Venetian blinds—Southern Venetian Blind Co.

FLOORS

All rooms have pine planks, kitchen floor is covered with linoleum, Armstrong Cork Products Co. Bathrooms-tile floor, Robertson Art Tile Co. Porchesconcrete.

WOODWORK

Trim, cabinets and exterior doors—cypress. Interior doors—fir.

HARDWARE

Interior and exterior-iron latches.

PAINTING

Interior: Walls, ceilings and trim-linseed oil and flat varnish on cypress, 2 coats flat paint on plaster, Sherwin-Williams Co. Floors—2 coats liquid granite, Berry Bros. Exterior: Walls and sash—2 coats outside paint, Sherwin-Williams Co. Roof—shingles left to weather. ELECTRICAL INSTALLATION

Wiring system-Romex. Fixtures-direct, made of iron, manufactured locally.

KITCHEN EQUIPMENT

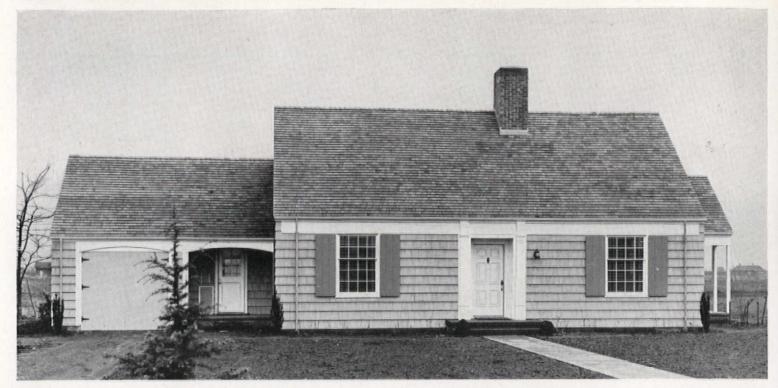
Sink-Standard Sanitary Mfg. Co. Drains-Robertson tile. Cabinet—cypress, built on Job. BATHROOM EQUIPMENT

Lavatory, tub and toilet-Standard Sanitary Mfg. Co. Seat-Church Mfg. Co. Cabinet-medicine cabinet, Miami Cabinet Division, Philip Carey Co. PLUMBING

Pipes-soil, cast iron. Water supply-copper tubing. Hot water heater-Solar Water Heater Co. HEATING

None.

38. HOUSE FOR DWIGHT PAULHAMUS, SUMNER, WASHINGTON



REAR



PROBLEM: Adequate sized house to fit requirements of family of four and maid.

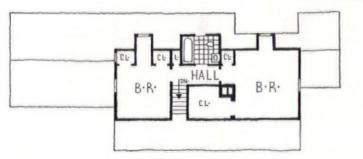
Dinger Photos

The architect has chosen an elementary American style, used it in a contemporary manner. The facade is quiet and dignified, the large windows having a very utilitarian air. Not so concerned with the appearance of the rear, the architect has placed dormer windows wherever required. In plan, the house is simple and direct. A central entry gives easy access to any room in the house save the dining room. The location of the heating room in the center of the house directly in back of chimney is excellent. The garage can be reached under cover. Cost: \$4,825. Cubage: 24,000 at 20 cents.

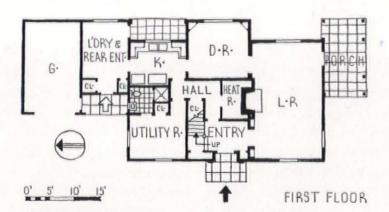
GEORGE W. GROVES, ARCHITECT



Photo Art



SECOND FLOOR



CONSTRUCTION OUTLINE

FOUNDATION

Walls-continuous 6 in. concrete.

STRUCTURE

Exterior walls-frame construction, 18 in. Perfection cedar shingles, Kraft building paper. Inside ½ in. Celotex and plaster. Interior partitions—2 x 4 in. studs. Wood lath and plaster. Floor construction—wood joists, shiplap sub-floor. Ceiling—plaster on wood lath. Second floor ceiling-1/2 in. Celotex and plaster.

Construction-wood. Finish-16 in. Perfection cedar shingles.

CHIMNEY

Common brick. Fireplace-Jambs and hearth face brick, back hearth fire brick.

SHEET METAL WORK

Flashing and leaders—Armco brand, 26 gauge galvanized iron. Gutters—wood.

INSULATION

Outside walls and attic floor-1/2 in. Celotex. Weatherstripping-Chamberlin Weatherstripping Co.

WINDOWS

Sash—fir, double hung. Glass—quality A, double strength, Libbey-Owens-Ford Glass Co. Venetian blinds-National Venetian Blind Co.

STAIRS

Oak treads, fir risers and stringers.

Living room-13/16 in. oak. Kitchen, bedrooms and bath-fir covered with linoleum, standard gauge, Armstrong Cork Products Co. Main hall-fir covered with rubber tile. Porches-concrete with Master Builder's

WALL COVERINGS

All rooms except kitchen and bath wall papered. WOODWORK

Trim, cabinets and doors-fir.

HARDWARE

Interior-Schlage Lock Co. Exterior-Best Lock Co.

PAINTING

Interior: Walls and ceilings-sealer and stipple finish. Trim and sash-undercoat and enamel, paints by Schorn. Exterior: Walls and roof-Creo-dipt shingle stain.

ELECTRICAL INSTALLATION

Wiring system-knob and tube. Switches-Hart & Hegeman, Fixtures-indirect in kitchen, other fixtures by Chase Brass & Copper Co.
KITCHEN EQUIPMENT

Stove and refrigerator-General Electric Co. Sink and laundry sink-Kohler Co.

BATHROOM EQUIPMENT

Lavatory, tub and toilet-Kohler Co. Seat-Church Mfg. Co. Cabinet-Venetian.

PLUMBING

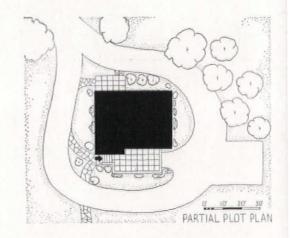
Pipes-cast iron and galvanized iron. Water supplygalvanized iron.

HEATING AND AIR CONDITIONING

Filtered and humidified air-Montag Stove and Furnace Works. Boiler-horizontal tubular welded steel automatic oil furnace, Montag. Thermostat-Minneapolis-Honeywell.

39. SUMMER COTTAGE FOR DR. SNYDER, DEEP CREEK LAKE, MD.,





Conceived as an integral part of its surroundings, this summer cottage was built in the sturdy traditional manner of our grandfathers. The foundations, porches and chimney were constructed of local stone, left in its original state. The house itself was made of wood logs, roughly dressed. The corners were saddle-notched and jointed, the spaces between the individual logs filled with mortar reenforced with—a modern touch—metal lath. Thoroughly consistent with the rest of the dwelling, the roof treatment has been left in its primitive rustic state. In plan, the house has been well organized. The main porch shows direct entrances into either the large living room or the heavily fenestrated dining room which looks over the lake. One of the three good-sized bedrooms opens off the living room while the other two may be reached from the rear porch without passing through the main living portion of the house. The kitchen provides good working area, has easy access to the dining room. Cost: \$3,253. Cubage: 12,828 at about 25 cents.

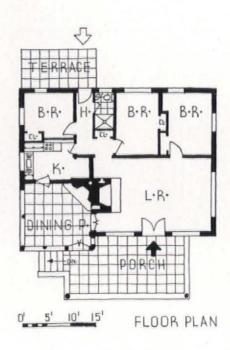
THURL W. TOWER, DESIGNER



FRONT VIEW



DETAIL



CONSTRUCTION OUTLINE

FOUNDATION

Walls-local rock laid in Portland cement.

STRUCTURE

Exterior walls-white pine logs, corners saddlenotched and fitted. Spaces between, chinked with metal lath and mortar. Interior partitions—logs. Floor construc-

tion-wood beams and sub-floor. ROOF

Construction—white pine pole rafters, wide chestnut sheathing. Finish—composition shingle. CHIMNEY

Local field stone. Damper—Majestic. SHEET METAL WORK

Flashing-sheet copper.

INSULATION

None.

WINDOWS

Sash—wood casements, northern white pine, chestnut frames. Screens—wood frames, copper mesh.

FLOORS

All rooms native red oak. WOODWORK

Closets-chestnut, cabinet work, wormy chestnut.

Doors-Sequoia red wood, batten type. HARDWARE

Door and window butts-Stanley. Interior door latches -hand made of wood with rawhide latch springs. Ex-

terior doors-forged iron, McKinney Mfg. Co.

PAINTING

Interior: Walls-creosote stain. Pole rafters and ceilings -stain and shellac. Floors-stain, spar varnish and wax. Trim-stain and oil. Exterior: Walls-creosote oil and stain. Trim and sash—stain and spar varnish. ELECTRICAL INSTALLATION
Wiring system—BX and non-metallic cable. Switches—

toggle and Bakelite covers.

KITCHEN EQUIPMENT Stove and refrigerator—General Electric, Sink—acid resisting enamel, Standard Sanitary Mfg. Co.

BATHROOM EQUIPMENT

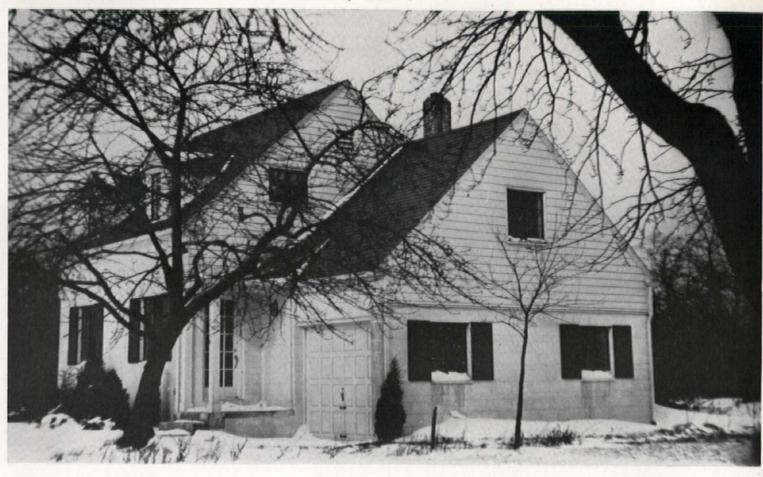
Fixtures by Standard Sanitary Mfg. Co. PLUMBING

Soil pipes-cast iron. Supply pipes-galvanized iron.

Septic tank. HEATING

None except fireplace.

40. HOUSE IN PAINESVILLE, OHIO



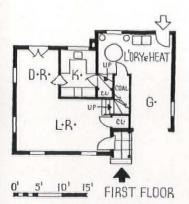
PROBLEM: To design a model home that will develop interest in the building of small, well-designed houses.

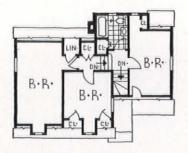
The problem of a demonstration house is always a difficult one. As long as it succeeds in priming the local construction pump, it is successful. If not, the architect is harshly criticized. Yet in the process of building, 99 times out of 100, the designer is definitely limited in his choice of materials and methods of constructions. This model home was no exception. The architect was commissioned to design a house with six rooms that would eliminate all the so-called waste space. He was told which materials he could use. When the house was completed, and the architect was publicly acclaimed for his effective demonstration of the values of architecturally designed small houses, he calmly announced: "This house could be built, of frame construction throughout, at a cost of 27 cents per cubic foot or for \$3,860." Actual cost: \$4,580. Cubage: 14,300, at about 32 cents.

JOHN WALLACE GREEN, ARCHITECT



ENTRANCE





SECOND FLOOR

PLAN: This plan clearly recommends itself for its large ratio of usable space to its cubic contents. With no basement, the heater is placed in the attached garage, furnishing direct though circuitous access to the house. The second floor is given over to sleeping quarters.

CONSTRUCTION OUTLINE

FOUNDATION

Walls—poured concrete. STRUCTURE

Exterior walls-8 in. Haydite blocks. Inside-furred with wood strips and plastered, U. S. Gypsum Co. Gables—2 x 4 in. studs, sheathing and siding. Interior partitions-2 x 4 in. studding, 16 in. o.c., rock lath and plaster, U. S. Gypsum Co. Floor construction—2 x 8 in. hemlock joists, 16 in. o.c., hemlock sub-floor. Plastered ceilings. ROOF

Construction-2 x 6 in. rafters, 16 in. o.c., sheathing, building paper. Finish—insulated cork asphalt shingles, Carey Co.

CHIMNEY

Brick, clay tile flue lining. SHEET METAL WORK

Flashing, gutters and leaders—tin, galvanized copper bearing steel, Target Brand.

INSULATION

Haydite blocks for walls, second floor ceiling, insulating lath, U. S. Gypsum Co.

WINDOWS

Sash-steel casements, Truscon Steel Co. Glassquality A, double strength, Pittsburgh Plate Glass Co. Blinds-white pine wood.

STAIRS

Oak treads, yellow pine risers and stringers. FLOORS

Living room, bedrooms and halls—oak. Kitchen and bathrooms—yellow pine covered with linoleum, Congoleum-Nairn, Inc. Porches—cement.

WALL COVERINGS

Living room, bedrooms and halls: walls and ceilingswall paper, Lennon Wall Paper Co. WOODWORK

Trim and cabinets-yellow pine. Doors-white pine. Garage doors-Overhead Door Co.

HARDWARE

Interior and exterior-Sargent & Co.

PAINTING

Interior: Walls and ceilings of bathroom and kitchenoil paint, Pittsburgh Plate Glass Co. Floors—shellac. Sash—oil paint, Glidden Co. Exterior—Medusa waterproof cement paint. Sash and trim—Glidden Co. ELECTRICAL INSTALLATION

Wiring system-Romex non-metallic armored cable, Rome Wire Co. Switches—Pass & Seymour. KITCHEN EQUIPMENT

Sink—Standard Sanitary Mfg. Co. Cabinet—wood. Laundry sink—Standard Sanitary Mfg. Co. BATHROOM EQUIPMENT

All fixtures by Standard Sanitary Mfg. Co. Seat-Church Mfg. Co.

PLUMBING

Soil pipes—cast iron. Waste and vent pipes—steel, Youngstown Sheet & Tube. Water supply—driven well, Deming pump and pressure tank, concrete septic tank. Grinnell pipe fittings and hangers.

HEATING AND AIR CONDITIONING

Warm air, forced, filtered and humidified. Coal fired Fox Sunbeam Furnace. Gas hot water heater and galvanized storage tank.

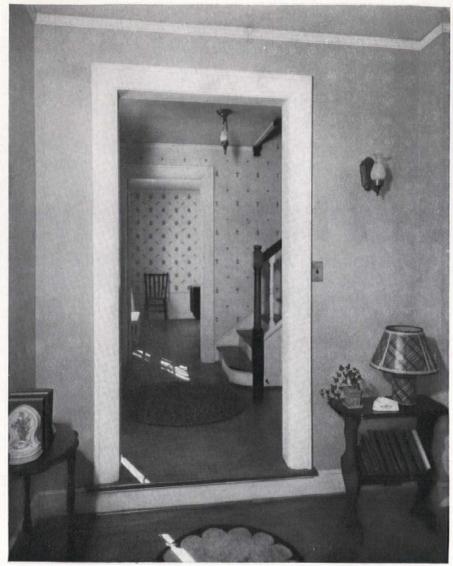
41. HOUSE FOR NED BALL, RALEIGH, NORTH CAROLINA



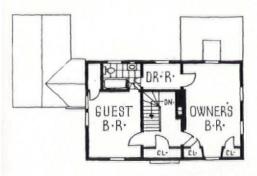
PROBLEM: A house that will permit later additions.

In character and style, appearance and setting, this house is just as New England Colonial as can be found in Dedham, Concord, Groton or any other of a dozen Massachusetts or Connecticut towns. Snow covered ground, stately pines and tin leaders complete the illusion. In his placement of the windows, his use of materials, his small subordinate attached garage and his excellent "purist" doorway, the architect has lost none of the traditional classicism, none of the dignity of proportion of the Early Colonial. To find an adaptation or an importation of a Northern style house in the South—one that retains its Yankee accent—is always architectural news. The plan had to admit of future additions. Accordingly the architect chose a logical central plan that would permit a wing to be added to the living room without upsetting the balance of the facade. In its present condition, the plan is conventional and practical. The attached garage has direct access to the house. Cost: \$4,802. Cubage: 19,460 or about $24\frac{1}{2}$ cents.

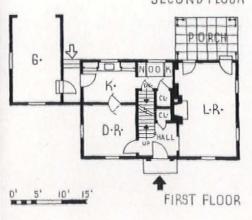
THOMAS W. COOPER, ARCHITECT

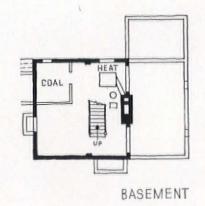


VIEW LIVING ROOM HALL



SECOND FLOOR





CONSTRUCTION OUTLINE

FOUNDATION

Walls—continuous 9 in. brick. Cellar floor—4 in. concrete floor on earth fill. Waterproofing—1 in. cement plaster on outside of walls from footings to grade line. STRUCTURE

Exterior walls-beveled-siding, Neponset paper, Bird & Son, Inc., % x 6 in. T. & G. pine sheathing, 2 x 4 in. studs, rock lath and 3 coat smooth white plaster, U. S. Gypsum Co. Interior partitions-2 x 4 in. pine studs, rock lath and 3 coat plaster, U. S. Gypsum Co. Floor construction-2 x 10 in. joists, 16 in. o.c., 34 x 6 in. T. & G. sub-floor, building paper, plaster ceiling on rock lath. Attic floor-2 x 8 in. ceiling Joists, rock lath and plaster.

ROOF

Construction-2 x 6 in, rafters, 16 in. o.c., with collarties, $\frac{3}{4} \times 6$ in. T. & G. pine roofers, 15 lb. roofers felt. Finish—220 lb. asphalt shingles, Johns-Manville. CHIMNEY

Lining-vitrified tile flue lining. Fireplace-throat and

damper, Donley Bros. SHEET METAL WORK

Flashing-galvanized iron. Gutters-galvanized halfround, hanging gutters. Leaders-3 in. round, galvanized.

INSULATION

None. Weatherstripping-extruded bronze thresholds at outside doors.

WINDOWS

Sash-white pine, double hung. Frame-No. 1 N. C. pine. Glass—quality A, double strength, Pittsburgh Plate Glass Co. Screens—half sliding, white pine, bronze mesh, mill made. Blinds—white pine stock slat

STAIRS

No. 1 N. C. pine throughout.

FLOORS

Living room, bedrooms and halls-random width, clear flat sawed N. C. pine with pegs. Kitchen-3/16 in. asphalt tile, Tile-Tex Co., Chicago. Bathrooms—ceramic tile floor, 6 in. cover base. Porches—concrete, marked off in squares.

WALL COVERINGS

Living room, bedrooms and halls-wall paper. Bathrooms-cement wainscot, Keene's.

WOODWORK

Trim, shelving and cabinets-No. 1 N. C. pine. Doors, interior-fir, 2 panel. Doors, exterior-white pine. Garage doors-redwood. HARDWARE

Interior-wrought brass, glass knobs; exterior-polished cast brass, all by Sargent & Co.

PAINTING

Interior: Walls-oil paint in kitchen and bath. Ceilings-oil paint. Floors-filled, shellacked and waxed. Trim and sash-3 coats semi-gloss enamel. Exterior: Walls and sash-3 coats lead and oil paint. ELECTRICAL INSTALLATION

Wiring system-BX cable. Switches-toggle type, dull brass.

KITCHEN EQUIPMENT

Stove-electric. Refrigerator-electric. Sink-60 in. roll-rim, Standard Sanitary Mfg. Co. Cabinet-mill made wood cabinets.

BATHROOM EQUIPMENT

Fixtures by Standard Sanitary Mfg. Co. Seat-white, Church Mfg. Co. Cabinet—Venetian type, all metal, Hess Warming & Ventilating Co.

PLUMBING

Pipes: Soil, waste and vent-standard weight cast iron. Water supply-copper service from street, galvanized steel inside.

HEATING

Boiler-coal, hand fired, American Radiator Co. Radiators-Corto, Valves-Hoffman Specialty Co. Hot water heater-Taco Heaters, Inc.

42. HOUSE FOR BLANCHE McDILL, OXFORD, OHIO

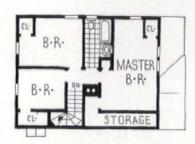


PROBLEM: Colonial home on a lot 60 x 120 ft., for a couple and one child. Garage and laundry in basement; living room, study, kitchen and lavatory on first floor, with provision for open-air dining. Three bedrooms and bath on second floor.

This less than five thousand dollar house had a job to do. While at first glance the elimination of a dining room would seem to simplify the problem of building within a restricted budget, here it is offset by the demand for a study, and the owner's other exacting requirements. The architect's provision for the preparation and serving of meals within a limited area is commendable. The kitchen has good working space well provided with light. There is easy access from the living room to the screened-in dining porch as well as direct approach from the kitchen. Less satisfactory is the proximity of the downstairs lavatory to the front entrance. An interesting feature is the wood box built into the fireplace with provision for filling from the cellar stairs. The second floor layout was obliged to accommodate itself to the turn in the staircase, and this, plus a closet problem, results in a less satisfactory solution than provided in the first floor plan. Bath is well placed in relation to the bedrooms. Cost: \$4,975. Cubage: 19,687 at 25 cents.

DAVID BRIGGS MAXFIELD, ARCHITECT

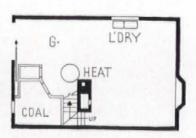




SECOND FLOOR







BASEMENT

KITCHEN DETAILS

CONSTRUCTION OUTLINE

FOUNDATION

Walls-continuous 8 in. concrete block on 8 in. concrete footings. Cellar floor—6 in. cinder fill 4 in. cement floor over. Waterproofing—3 coats asphalt emulsion, Philip Carey Co.

STRUCTURE Exterior walls—wooden studs, % in. T. & G. sheathing, Neponset waterproof paper and 10 in. redwood clapboards. Inside Masonite lath and plaster. Interior partitions-plaster on Masonite lath over 2 x 4 in. studs. Floor construction-first floor, 2 x 10 in. Joists, second floor, 2 x 8 in. Joists, attic floor, 2 x 6 in. Joists, 1 x 6 in. T. & G. sheathing Neponset waterproof paper. Ceiling-plaster on insulating lath. ROOF

Construction-2 x 8 in. rafters, 1 x 4 in. roof boards. Finish-wood shingles.

CHIMNEY 12 x 12 in. clay flue lining. Covert damper, fireplace lined with fire brick. Hearth and opening of red Colo-

nial brick. SHEET METAL WORK Flashing-40 lb. tin. Gutters-O. G. 5 in. galvanized

iron. Leaders-4 in. galvanized iron. INSULATION

Outside walls, ground floor, attic floor and roof-1 in. balsam wool insulating blanket. WINDOWS

Wood double hung, steel casements crank operated in kitchen, bath and bay window. Glass—quality B. Screens—wood frames 1½ in. thick. STAIRS

Oak treads, risers and stringers of pine. FLOOR

Living room, bedrooms and halls-16 oak, 21/4 in. face. Kitchen and bathrooms-pine and linoleum. Porches-11/8 in. white pine. WALL COVERINGS

Living room, bedrooms and halls-wall paper. Studygrain board on walls and ceilings, U. S. Gypsum Co. WOODWORK

Trim, shelving and cabinets—white pine. Interior doors—2 panel 1% in. thick pine. Exterior doors—1% in. white pine. Garage doors-stock 134 in. white pine. HARDWARE

All brass with glass knobs. Butts are plated brass. Bath and kitchen are chromium.

PAINTING

Interior: Walls and ceilings in bath and kitchen-3 coats enamel. Floors-3 coats varnish, No. 61, Pratt & Lambert, Trim and sash-oil paint, Exterior: Walls and sash-3 coats oil paint. **ELECTRICAL INSTALLATION**

Wiring system-BX. Fixtures-all solid brass, built-in and direct.

KITCHEN EQUIPMENT

Stove and refrigerator—electric. Sink—Standard Sanitary Mfg. Co. Cabinet—built-in cupboards, sliding doors of Masonite and wood.

BATHROOM EQUIPMENT

Fixtures by Kohler Co. Seat-Church Mfg. Co. PLUMBING

Soil, waste and vent-4 in. cast iron. Water supply-34 in. galvanized steel pipe. Sump pump-Penberthy Injector Co.

HEATING

Hot air gravity. Thermostat—Cook thermostatic controls. Hot water heater—Ideal No. 75, equipped with Arco thermostatic controls, American Radiator Co. SPECIAL EQUIPMENT

Dutch oven in living room. Clothes chute from bath and kitchen to cellar laundry.

43. HOUSE FOR JOSEPH and GERTRUDE KUN, HOLLYWOOD, CALIF.

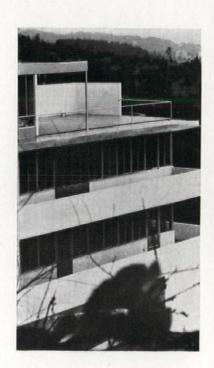


Luckhaus Photos

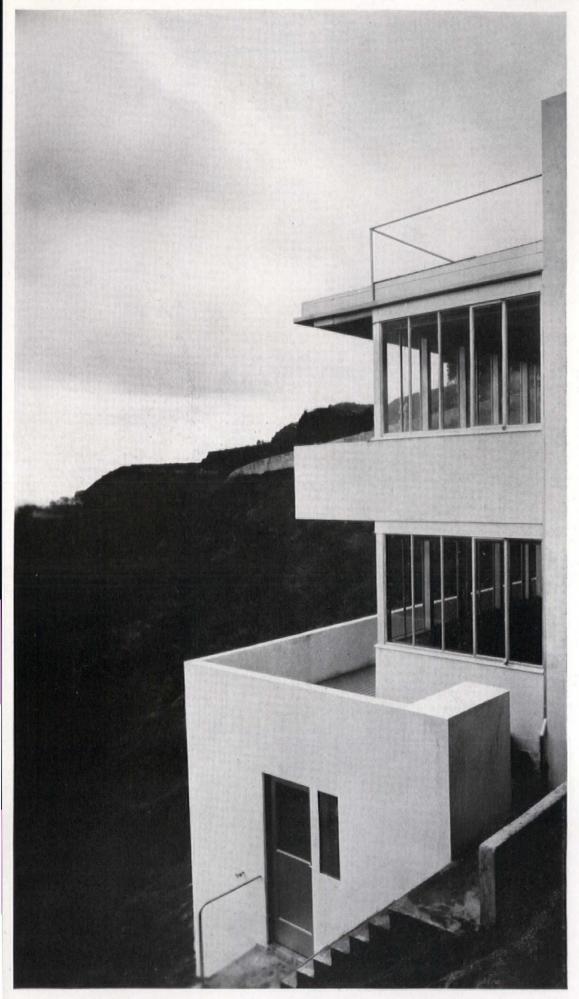
PROBLEM: A house for couple and adult daughter and occasional guests.

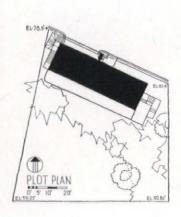
Vigorously dramatic in its setting, this modern house commands an inspiring view of the valley and ocean below. Because of its location on a steep hillside, the architect found it necessary to build it in multi-stories, place the garage and main entrance on top, compose the house downwards. Short flights of steps connect the different story or deck levels. Long open 40-foot balconies, shaded by roof overhangs and Venetian blinds—aluminum coated for more perfect heat reflection—run along the outer edges of the house in the lower decks, mark the transition between the glass-protected interior and the concrete parapet. Clean cut and trim the construction is a unit type chassis of continuous truss bracing, with a uniform spacing of the rebated supports to receive the stock steel sash.

The clean, fresh treatment of the exterior is repeated in the bold, uncluttered surface areas of the interior. The rooms are void of "decoration." Indirect lights, installed in the soffits of the window overhangs, illuminate the interiors through the wide glass front, creating the effect of sunlight streaming through the windows. The completely electrified kitchen, painted light silver gray to almost white, is enlivened by Chinese red cabinets and compartments. The table tops and drainboards are of structural glass. The bathroom between the two large bedrooms on the lower deck (first floor) has glass wainscoting. Cost: \$5,000. Cubage: 20,195 at approximately 25 cents.

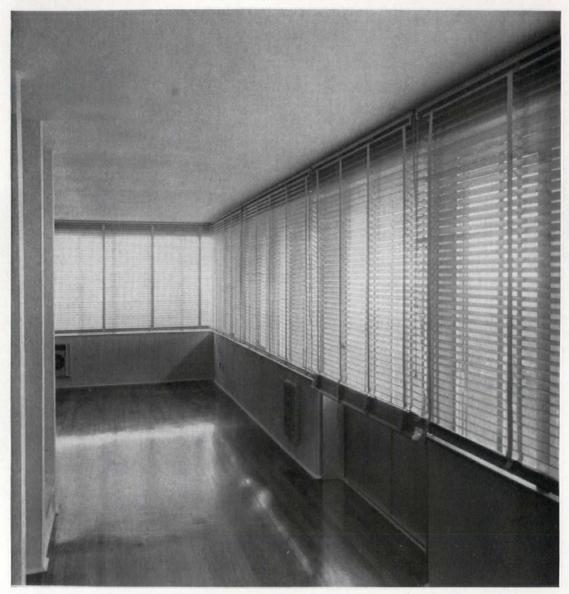


RICHARD J. NEUTRA, ARCHITECT, G. AIN, COLLABORATOR

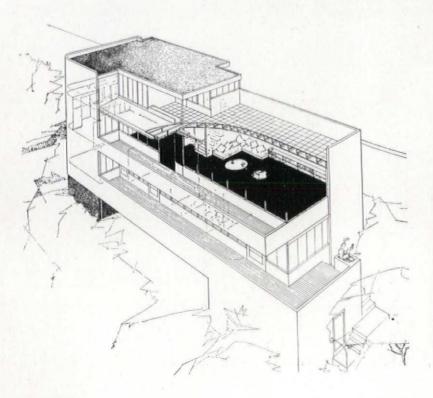


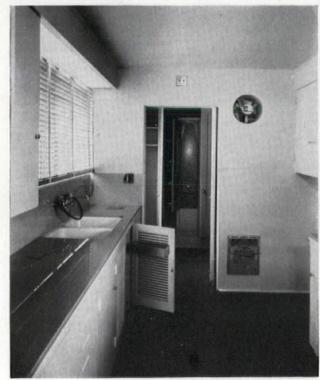


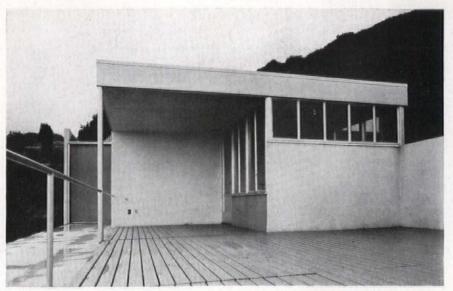
HOUSE FOR JOSEPH AND GERTRUDE KUN, HOLLYWOOD, CALIFORNIA



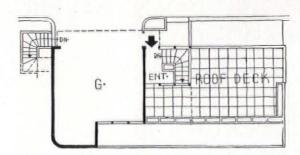
LIVING ROOM



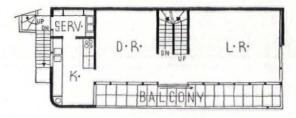




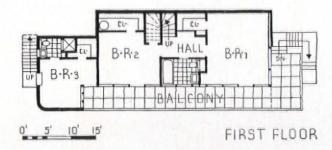
ROOF DECK AND GARAGE



TOP FLOOR



SECOND FLOOR



PLAN: The plan is featured by the large areas of open living space. The main floor is given over to large living and dining areas, and a good-sized kitchen, which includes a breakfast corner and service porch. A third bedroom, with bath, furnishes a private guest suite on the first floor, with sole access to the house from the balcony. The lowest deck, built largely above ground, contains storage area, a small sunken basin for bathing in the summer, and a covered porch which opens onto the terraced hillside.

OUTLINE CONSTRUCTION

FOUNDATION

Walls-continuous longitudinally, reenforced concrete footings. Cellar floor-cement slab 3 in. thick. Waterproofing-asphalt coating on foundation walls against

STRUCTURE

Exterior walls—standard unit type chassis consisting of 4 x 6 in. surfaced, straight grain Douglas fir posts rebated and spaced to receive standard steel sash; continuous diagonal bracing, notched in spandrel ribbons. Brush coated cement plaster on metal lath outside, lime putty finish plaster all interior. Floor construction-Douglas fir Joists cross bridged diagonally braced to form a diaphragm ready to take lateral forces. Ceilings -lime putty finish plaster on Celotex lath. ROOF

Same as floor construction, partly supported by steel pipe columns. Pioneer composition roof over garage, otherwise Pioneer 75 lb. walking deck for roof garden. composition roofing material-Best

Keene's Cement Co. SHEET METAL WORK

Flashing—Columbia steel, 26 gauge galvanized iron. Gutters and leaders—Columbia steel, 24 gauge galvan-

INSULATION

Outside walls-Celotex partly, top floor and roof, Celotex.Bronze weatherstripping around sliding steel door. WINDOWS

Sash—steel with extension hinges (swinging side-ways). Frame—Druwhit steel. Glass—quality A, double strength, Pittsburgh Plate Glass Co., obscure glass, Factrolite, Mississippi Glass Co. Screens-copper

STAIRS

Douglas fir, carpeted by owner.

FLOORS

Living room, bedrooms and halls-white oak 1/2 x 11/2 in. Kitchen and bathrooms—medium quality linoleum on $1\frac{1}{2}$ lbs. felt, Armstrong Cork Products Co. Porches— Pabco Mastipave, Paraffine Cos.

WALL COVERINGS

Carrara glass in kitchen and bath but not included in total cost.

WOODWORK AND TRIM

Metal bull nosing around door Jambs, Shelving and cabinets-Douglas fir. Doors, interior and exterior-Presdwood Masonite flush panel and one panel. Garage doors-Overhead, lever type, redwood.

HARDWARE

Locks and latches-Schlage Lock Co.

PAINTING

Interior walls and ceilings—4 coats of flat paint. Floors—stained, Sash—3 coats of Albron Aluminum over shop coat, Exterior walls—Armor coat waterproof brush coat. Sash-3 coats of Aluminum paint

exterior quality.
ELECTRICAL INSTALLATION

Rigid enameled conduits, Sherardized underground, General Electric. Switches—tumbler, Bryant Electric Co. Fixtures-Holophane light control fixtures with circular lenses and aluminum trim, Lumiline Tubular Lamps.

KITCHEN EQUIPMENT

Stove and refrigerator—General Electric, Robertson revolving cooler, electric exhaust fan.

BATHROOM EQUIPMENT

Slab china on chromed tubing legs, recess tub, combination tank toilet, all fixtures Standard Sanitary Mfg. Co. Seat—Church Mfg. Co. PLUMBING

Soil pipe-Hercules 4 in., La Clede screw pipes for supply, Thrush pressure regulator.

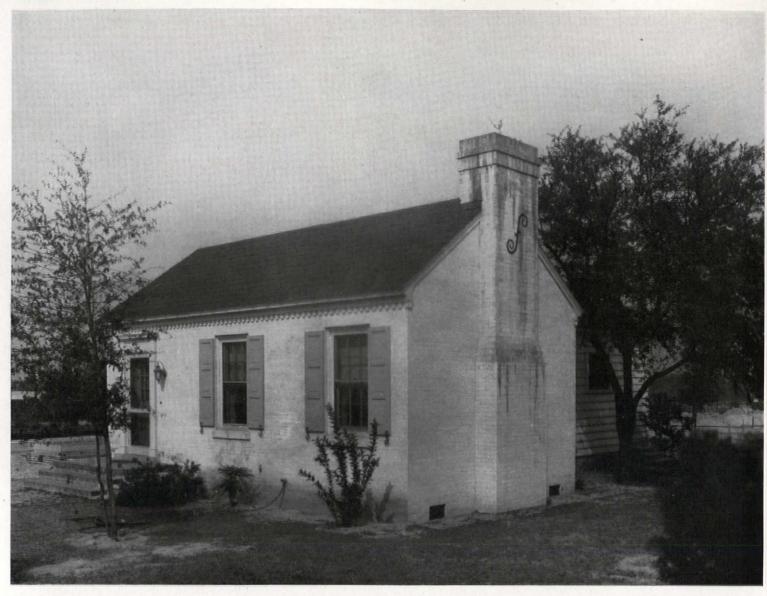
HEATING

Thermador fan electric heater with thermostatic control for all rooms; 4,000 watt electric water heater-Thermador Electrical Mfg. Co.

SPECIAL EQUIPMENT

Indirect lighting from exterior overhangs into living quarters. Sunken Roman Bath in basement, on garden

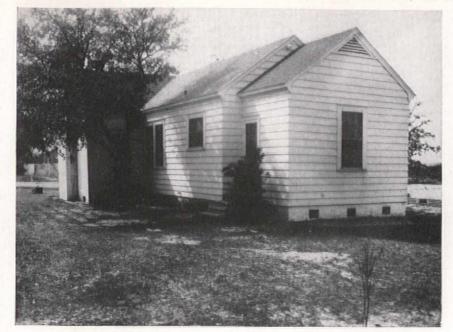
44. HOUSE FOR LELIA ABERCROMBIE, PENSACOLA,

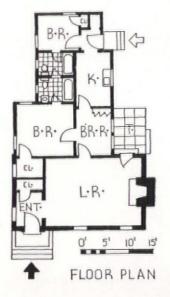


PROBLEM: A distinctive small house for a lady.

The early Colonial farmhouse started out as a rectangular box, adding rooms as need arose, in a series of ever-diminishing units whose final appearance was not unlike that of a telescope. This process of growth was natural and the result had consistency, balance, and often charm. Here a similar effect has been sought but with a main unit so small and so drastic a change in materials a complete feeling of integration is somewhat lacking. As individual units both are well handled, particularly the main portion with its pleasant brick surfaces and restrained use of ornament. Cost: \$3,300. Cubage: 14,350 at 23 cents.

FLORIDA, CHANDLER C. YONGE, ARCHITECT, R. DANIEL HART, ASSOCIATED





PLAN: The plan has much to commend it. The service quarter is effectively cut off by the kitchen from the rest of the house. In keeping with the contemporary tradition, space has been allotted to a breakfast nook that looks out over the surrounding country from the terrace. It is hard to see how any more living space could be packed into so small an area.

OUTLINE CONSTRUCTION

FOUNDATION

Walls-4 in. curtain wall with piers.

STRUCTURE

Exterior walls-brick veneer, 30 lb. felt, No. 2 wood sheathing, 2 x 4 in. studs. Inside-wood lath and putty finish plaster. Interior partitions-2 x 4 in. studs, wood lath and plaster. Floor construction-2 x 10 in. and 2 x 8 in. Joists, 16 in. o.c., sub-floor, plaster ceiling. ROOF

Construction—2 x 6 in. rafters, 16 in. o.c., 1 x 6 in. T. & G. sheathing, 30 lb. felt. Finish—composition, Dutch lap shingles.

CHIMNEY

Common brick, 9 x 12 in. terra cotta lining. Heatilator air circulator.

SHEET METAL WORK

Flashing-26 gauge galvanized iron.

INSULATION

Attic floor-1 in. thick Temlok board. Weatherstripping-outside doors with Monarch thresholds.

WINDOWS

Sash—white pine, 1% in. stock sizes, double hung. Frame—No. 1 cypress. Glass—quality A, double strength. Screens—full length copper bronze in wood frames. Blinds—white pine 1% in. thick.

Living room and bedrooms-oak, select grade. Kitchen and bathrooms-linoleum. Porches-brick.

WOODWORK

Trim, shelving and cabinets—yellow pine. Interior doors—fir, stock. Exterior doors—special white pine; front door, other stock. HARDWARE

Interior-cast brass, Colonial brass finish. Exteriorcast brass, black finish.

PAINTING

Interior: Walls and ceilings-primer and 2 coats semigloss. Floors-stain, fill, 2 coats varnish, wax. Trim and sash-4 coats, final coat egg shell finish. Exterior: Walls—brick walls white washed. Frame wall and sash—3 coats lead in oil.

ELECTRICAL INSTALLATION
Wiring system—BX. Switches—tumbler type, Hart & Hegeman. Fixtures-direct, pewter finish.

KITCHEN EQUIPMENT
Stove and refrigerator—electric. Sink—42 in., Standard Sanitary Mfg. Co. Cabinet—yellow pine. BATHROOM EQUIPMENT

Fixtures by Standard Sanitary Mfg. Co. Seat-Church Mfg. Co.

PLUMBING

Pipes-copper. Soil pipes-cast iron. Supply-copper. HEATING

Hot air circulator in fireplace, gas in bedrooms.

GATE LODGE, SEATTLE, WASHINGTON



Todd Hazen Photos

PROBLEM: On a lot unlimited in size, to build a gate lodge for two people.

The function of gate keeping went out years ago but this fact did not prevent the architect of this cottage from drawing upon an old romantic custom. In designing it, he conceived it as an integral part of the domain, set it as near the threatened border as possible. Then, not tied down with tradition or actual danger, he constructed the lodge of flush siding and trim, repeated the brick of the gate posts in the whitewashed chimneys. For the exterior walls, he chose ordinary shingles, dressed up the window spaces with attractive ornamental blinds. The use of shrubbery is an outstanding example of the vital part that landscaping plays in presenting a house to its best advantage. Cost: \$4,385. Cubage: 20,530 at 21 cents.

GEORGE WELLINGTON STODDARD, ARCHITECT





PLAN: The main entrance makes use of a covered porch to avoid an entrance hallway, consequently leads directly into the living room. The plan, in its division of the two bedroomswith their common hall and bath-from the rest of the house is successful. The service entrance to the kitchen is, of necessity, on the same side of the house as the front entrance but the setback completely subordinates it to its minor position.

CONSTRUCTION OUTLINE

FOUNDATION

Walls—6 in. concrete walls. STRUCTURE

Exterior walls-34 in. handsplit shakes, 10 in. to weather, Excel Shingle Co., Sisalkraft paper, shiplap, 2 x 4 in. studs. Inside—wood lath and plaster. Interior partitions—wood lath and plaster on 2 x 4 in, studs. Floor construction—wood joists, shiplap sub-flooring. ROOF

Construction-2 x 4 in. rafters, 1 x 3 in. roof boards. Finish-1 in. handsplit shakes, 8 in. to weather, Excel Shingle Co.

CHIMNEY

Hard burned common brick, Builders Brick Co. Fireplace-common brick facing, firebrick lining, Tristop damper.

SHEET METAL WORK

Flashing, gutters and leaders-16 oz. copper.

INSULATION

None.

Weatherstripping-Chamberlin Metal Weather Strip Co. WINDOWS

Sash-wood, both double hung and casement. Glassdouble strength, Libbey-Owens-Ford Glass Co. STAIRS

Stock treads, risers and handrail.

FLOORS

All rooms-Presdwood tile on fir flooring, Masonite Corp. Kitchen and bath-grade A linoleum, Armstrong Cork Products Co. WALL COVERINGS

Living room, bedrooms and halls-wall paper, Imperial. WOODWORK

Fir throughout, Elmer, Moody & Co.

HARDWARE

Interior and exterior-Yale & Towne Mfg. Co. PAINTING

Interior: Walls and ceilings-oil paint, flat. Trim and sash-oil paint, enamel, Schorn Paint Mfg. Co. Exterior: Walls and sash-outside white, Schorn Paint Mfg. Co.

KITCHEN EQUIPMENT

Sink—Standard Sanitary Mfg. Co. BATHROOM EQUIPMENT

All fixtures by Standard Sanitary Mfg. Co.

HEATING

Hot water, oil burner, Pacific Burner Co.

46. HOUSE FOR C. J. VANDENHOOGEN, HEMPSTEAD, L. I.,



Murray Peters Photos

PROBLEM: House designed for sale.

Although this house was not designed for an individual client, the architect visualized a genial, sociable person who would utilize the large living room for gracious entertaining. Hence the designer devoted more than half of the first floor to the living room, saved additional space by eliminating the conventional hall-way (although providing a closet) and constructing built-in features in the wood paneling. Although his treatment of the dining room differed in materials and detail from the living room, by eliminating the doorways, the architect was able to furnish additional multi-purpose space. The large kitchen area provides ample room for the preparation of refreshments. In outward appearance, the house is well balanced and pleasing. The effect would have been enhanced had the use of blinds and shrubbery been continued on all four sides. Cost \$3,200. Cubage: 15,525 at approximately 21 cents.

NEW YORK, MAXMILLIAN R. JOHNKE, ARCHITECT



LIVING ROOM-DINING ROOM





SECOND FLOOR

PLAN: The large amount of space given over to the combined pantry and kitchen is unusual. The former serves double duty as reception room and storage space. A cleaner second floor plan would have resulted from a rearrangement of closet areas.

CONSTRUCTION OUTLINE

FOUNDATION

Walls-8 in, concrete block. Cellar floor-3 in, concrete with 1 in. cement finish. Waterproofing-skim coat of cement.

STRUCTURE

Exterior walls-frame construction with Perfection shingles staggered. Inside-plastered throughout except where wood wainscot.

ROOF

Construction-2 x 6 in. rafters, 16 in. o.c. shingle lath, 1 x 3 in. Finish-Perfection cedar shingles 5 in. to weather.

CHIMNEY

Terra cotta flue linings, old style damper-H. W. Covert Co.

SHEET METAL WORK

Flashing, gutters and leaders-copper.

INSULATION

Celotex on sloping portion of ceilings only. Weatherstripping-metal.

WINDOWS

Sash-double hung throughout except kitchen. Glasssingle thick, Pittsburgh Plate Glass Co.

STAIRS

Oak treads and white pine risers and stringers-stock

FLOORS

Living room, bedrooms and halls—oak flooring, No. 2 select. Kitchen—covered with No. 3 grade linoleum. Bathroom-tile wainscot and floor.

WALL COVERINGS

Living and dining room-knotty pine wainscot. Bed-rooms and halls-wall papered.

Trim, shelving and cabinets-No. 2 white pine. Interior doors-6 panel Colonial, 1% in. thick. Exterior doors-6 panel Colonial, 134 in. thick. Garage doors-134 in. thick, white pine.

HARDWARE

Interior and exterior—Sargent & Co. PAINTING

Interior: Walls-wood wainscot, Minwaxed and waxed 2 coats. Bathroom and kitchen—above wainscot 3 coats and closets 2 coats. Ceilings-calcimine, Hylight Products Co, Floors-Minwax stained and waxed 2 coats. Trim and sash-painted 3 coats, Exterior: Wallspainted 2 coats. Roof-stained 2 coats. Sash-painted 3

ELECTRICAL INSTALLATION

Wiring system—BX cable. Switches—toggle switches. Fixtures—McPhilbin Co.

KITCHEN EQUIPMENT

Stove-Star range, Detroit Vapor Stove Co. Sink-combination laundry tub and sink, Kohler Co. Cabinet-Ridgeway. Built-in ironing board-Curtis Companies,

BATHROOM EQUIPMENT

All fixtures by Kohler Co. Cabinet-Ridgeway.

PLUMBING

Soil and vent pipes-extra heavy cast iron. Water supply-copper tubing. Tank-40 gal. Monel Metal storage,

HEATING AND AIR CONDITIONING

Holland air heating system, coal fired boiler, forced air with water trough for humidifying, thermostatic control, no cooling. Hot water heater-coal fired.

47. STUDIO COTTAGE, NEW HOPE, PENNSYLVANIA



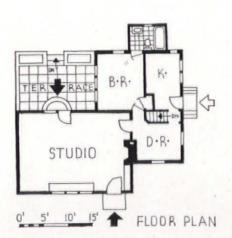
This little studio cottage looks very well in its setting. Of economical frame construction, it comfortably accommodates two people, in a pinch can squeeze in a third by putting a day bed in the dining room. In such a case however, a portion of the studio is drafted into dining room duty which makes the location of the kitchen unfortunate. A better solution might have placed the kitchen in the space now occupied by the dining room and transposed the bedroom into the kitchen. This would leave the new dining room with a view over the terrace. Due to its protected southeast corner exposure, the terrace is usable practically all winter. Flower beds set in bottomless brick enclosures in the terrace keep flowers growing without drying up. In the winter, the flowers can be taken out and evergreens set in. For the size of the house, the fireplace is large enough to supply sufficient heat should the owner desire to live there all year. Cost: \$2,420. Cubage: 11,961 at about 20 cents.

MARGARET F. SPENCER, ARCHITECT



STUDIO WINDOW

Hampton Hayes



CONSTRUCTION OUTLINE

FOUNDATION

Walls-poured concrete. Cellar floor-6 in. concrete slab.

STRUCTURE

Exterior walls-white pine clapboards, Kraft building paper on diagonal sheathing, 2 x 4 in. studs. Inside-Celotex and plaster, galvanized wire over all Joints and corners. Interior partitions-studs, Celotex and plaster. Floor construction-yellow pine Joists, ends creosoted, T. & G. diagonal underflooring and Sisalkraft paper. Plaster ceilings on Celotex.

ROOF

Construction-fir plate and rafters, Celotex sheathing and shingle lath. Finish-24 in. wood shingles, Royal. CHIMNEY

Brick. Fireplace—damper, H. W. Covert Co. SHEET METAL WORK

Flashing-zinc. Valleys-40 lb. tin. Gutters and leaders-Toncan metal, Republic Steel Corp.

INSULATION

Outside walls-4 in. balsam wool quilt, beside Celotex on all walls, ceilings and roof.

WINDOWS

Sash-fixed sash for studio north light, otherwise double hung, clear white pine frames. Glass—double strength, quality A, Libbey-Owens-Ford Glass Co. Screens-wood frames, bronze mesh. Blinds-fixed slat. FLOORS

All rooms—2½ in. selected yellow pine. Kitchen and bathroom floors are covered with linoleum, Armstrong Cork Products Co. Porches-flagstone.

WALL COVERINGS

Kitchen and bathrooms-wall board tile.

WOODWORK

Trim-white pine.

HARDWARE

Colonial pattern, brass and glass knobs-Sargent & Co. PAINTING

Interior: Walls-3 coats "Stonetex" wash, Truscon Laboratories. Floors-2 coat oil and 3 coat wax. Trim-3 coat oil paint. Exterior: Walls, trim and sash-3 coat white lead and linseed oil, National Lead Co. ELECTRICAL INSTALLATION

Wiring system-BX.

PLUMBING

By Crane Co. and Kohler Co.

HEATING

Warm air, outside fresh air ducts, furnace by Richardson & Boynton. Coal hot water heater.

48. HOUSE FOR J. J. PACE, SAN ANTONIO, TEXAS

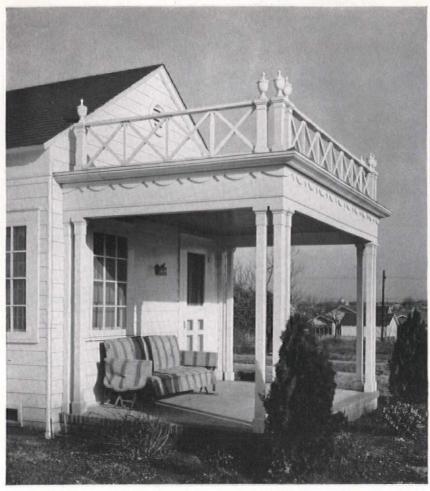


James Zintgraff Photos

PROBLEM: A house for a family of three and occasional guests. Lot $(57.5 \times 130 \text{ ft.})$ is on a corner.

Wood frame construction solved the problem for this San Antonio house. With a corner location, the architect chose north orientation as an east porch was required. Despite the small size of the porch in relation to the larger mass of the house, it completely dominates the facade, creates a strong lateral accent that somewhat detracts from the dignity of the house proper. The balustrade has been applied as decoration, there being no access to the upper deck. Cost: \$4,800. Cubage: 18,166 at $26\frac{1}{2}$ cents.

BARTLETT COCKE, ARCHITECT



PORCH



PLAN: The plan is neat and clean. The porch, facing east, has direct access to the living room. The kitchen is well planned both for service and deliveries, has good working area. The closet spaces are well organized. The bedrooms, well located for the morning sun, center equally on the one bath.

CONSTRUCTION OUTLINE

FOUNDATION

Walls-wood girders on concrete posts.

STRUCTURE

Exterior walls-pine siding on wood studs, shiplap, canvas and paper on interior. Interior partitions—wood studs, shiplap, canvas and paper both sides. Floor construction-wood Joists, shiplap sub-floor and building paper.

ROOF

Construction-wood joists and roof rafters. Finish-asphalt composition shingle. Deck constructionwood ceiling joists, and roof rafters. Finish-metal. CHIMNEY

Terra cotta flue lining, cast iron damper-Alamo Iron Works.

SHEET METAL WORK

Flashing, gutters and leaders—Armco galvanized iron. INSULATION

None. Weatherstripping-Metal Weatherstrip Co., Monarch outside doors only.

WINDOWS

Sash-double hung white pine. Frame-yellow pine, cypress sill. Glass-quality A, single strength. Screensoutside wood frames, galvanized netting. Blindscypress, do not operate.

FLOORS

Living room, bedrooms and halls-oak. Kitchen-pine with linoleum. Bathrooms-tile. Porches-cement, with brick edging.

WALL COVERINGS

Living room, bedrooms and halls-wall paper. Kitchen -Sanitas, The Standard Textile Products Co. Bathrooms-Keene's cement and wall paper.

WOODWORK

Trim-pine. Shelving and cabinets-pine and fir. Doors -white pine. Garage doors-yellow pine.

HARDWARE

Interior and exterior-P. & F. Corbin & Co.

PAINTING

Interior: Floors-dull coat, Pratt & Lambert. Trim and sash-enamel. Exterior: Walls and sash-Sunlight, Pittsburgh Plate Glass Co.

ELECTRICAL INSTALLATION

Wiring system—conduit. Switches—Harvey Hubbell. KITCHEN EQUIPMENT

Refrigerator-Frigidaire. Sink-Crane Co. Cabinetmilled.

BATHROOM EQUIPMENT

All fixtures by Crane Co.

PLUMBING

Soil and vent pipes-cast iron. Supply pipes-galvanized iron.

HEATING

Gas outlets only. Hot water heater-Crane Co.

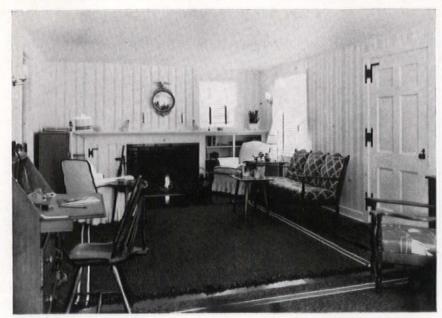
49. HOUSE FOR C. G. RAIBLE, VERMILION LAGOONS,



PROBLEM: A summer residence for a family of five and occasional guests. Style to conform to community restrictions.

Situated some 40 miles west of Cleveland on Lake Erie is the residential district of Vermilion Lagoons. With a maze of waterways connecting the lagoon with the river and lake, the spot is an ideal haven for yachting and boat enthusiasts. The residences are definitely restricted to a Cape Cod style of architecture. In this case, the architect successfully adapted this style, used it with a certain amount of freedom. Oriented south, the house overlooks a formal lawn that terminates in a private wharf on the lagoon. The small picket fence, completely surrounding the property, repeats the material of the house and creates a sense of privacy. The interiors are consistent. Cost: \$4,700. Cubage: 16,757 at 28 cents.

VERMILION, OHIO, W. NORMAN JEAVONS, ARCHITECT



LIVING ROOM

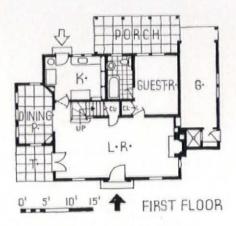


LIVING ROOM-DINING PORCH

PLAN: The main entrance rightly faces the lagoon. There is no entrance from the street other than through the kitchen. The attached garage faces the street but opens on the lawn, has access to the house via the front door. The guest room, with its private bath, is a good feature. The second floor, given over to the family's sleeping quarters, provides ample room for parents and three children.



SECOND FLOOR



OUTLINE CONSTRUCTION

FOUNDATION

Walls-common brick.

Exterior walls-bevel siding on yellow pine frame. Interior partitions—white pine wood lath and prepared patent plaster, U. S. Gypsum Co. Floor construction yellow pine Joists and sub-flooring, Plastered ceilings.

Construction-2 x 6 in. yellow pine rafters, shingle lath. Finish-Mauk double dipped wood shingles.

CHIMNEY

Common brick-damper, Donley Bros.

SHEET METAL WORK

Flashing—copper. Gutters and leaders—galvanized iron. INSULATION

Outside walls and rafters-aluminum foil, Reynolds Metals Co. Weatherstripping-copper. WINDOWS

Sash—white pine double hung and casement. Glass—single thick, quality A, Pittsburgh Plate Glass Co. Screens—copper mesh in wood frames. FLOORS

Yellow pine. Bathrooms—rubber tile. WALL COVERINGS

Wall tile dado-Marsh Wall Tile Co. WOODWORK

Trim-yellow pine. Doors-white pine. HARDWARE

"Patrician," Lockwood Hardware Mfg. Co.

PAINTING

Interior: Floors-heavy lacquer, mixed with color. Trim and sash-3 coat, eggshell finish. Exterior: Walls and sash-white lead and oil, dull glossy finish, Sherwin-Williams.

ELECTRICAL INSTALLATION

Wiring system—BX. Switches—toggle. KITCHEN EQUIPMENT

Stove-Electromaster Inc.

Sink-enamel, roll top.

BATHROOM EQUIPMENT

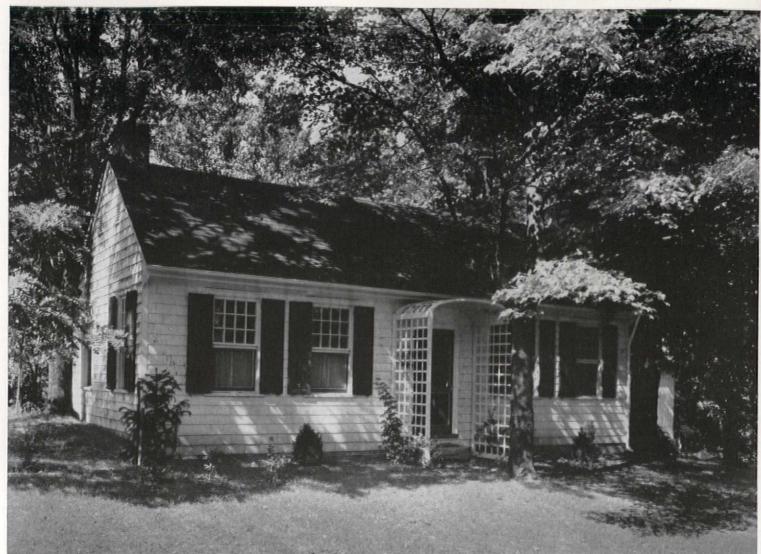
Fixtures by Crane Co. Cabinet-built on job.

PLUMBING

Pipes-galvanized iron, Republic Steel Corp.

HEATING

50. HOUSE FOR ELEANOR TOWLES, CHARLOTTESVILLE,



Hobinger Photos

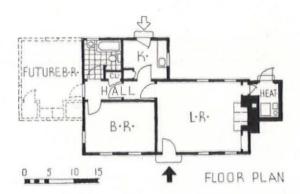
PROBLEM: House for a lady who lives alone. Style to harmonize with house on adjoining lot.

The wide literary and historical interests of the client prompted the architect to design a house that would fittingly reflect the personality of the owner. The problem was handled with taste and restraint. The facade is studied and rigid, the twenty-four light windows carefully placed on direct axis. The same severe simplicity was carried into the interior where, in the living room, the shape of the door leading to the heating room is repeated by a built-in bookcase that balances the other side of the fireplace. Cost: \$3,503. Cubage: 8,906 at a little over 39 cents.

VIRGINIA, MILTON L. GRIGG, ARCHITECT



LIVING ROOM



PLAN: The plan is not so conventional as the exterior appearance, being designed to fit the client's convenience, not any rule of academic rigidity. Space seems, at first glance, to have been lost in the construction of a hall between the bath and the bedroom, but should the proposed future bedroom ever be added, the foresight of the designer will be appreciated.

CONSTRUCTION OUTLINE

FOUNDATION

Walls-continuous brick.

STRUCTURE

Exterior walls-redwood shingles, % in. sheathing, 2 x 4 in. studs, Celotex lath and plaster. Interior partitions—2 x 4 in. studs, Red Top rock lath and sand finish plaster, U. S. Gypsum Co. Kitchen and bath— Keene's cement, Best Bros. Floor construction-2 x 6 in. joists, sub-floor. Ceiling-2 x 8 in. joists, rock lath and plaster.

ROOF

Construction-2 x 8 in. rafters-30 lb. felt and sheathing. Finish-Flintkote tapered strips composition shingles.

CHIMNEY

Field stone. Lining-terra cotta. Fireplace-oversize hand made brick, Old Virginia Brick Co. Damper-

custom built. SHEET METAL WORK

Flashing, gutters and leaders-Armco iron.

INSULATION

Outside walls-Celotex lath, rock lath on ceilings. Weatherstripping-Monarch Metal Weatherstrip Co. WINDOWS

Sash-redwood, double hung except in kitchen and bath which are casements. Frame-yellow pine. Glassdouble strength, quality A, Pittsburgh Plate Glass Co. Screens-bronze in redwood frames, half opening, sliding. Blinds-stock louvered.

FLOORS

Living room, bedrooms and halls-21/4 in. red oak, Barnes Lumber Co., Inc. Kitchen and bath—2½ in. fir covered with grade D linoleum, Armstrong Cork Products Co.

WOODWORK

Trim-redwood, special detail. Shelving and cabinetsyellow pine and fir plywood, special design. Doorsredwood, special design.

HARDWARE

Hand wrought iron-special, Reading Iron Co.

PAINTING

Interior: Walls and ceilings—Farbo cold water paint, Farboil Paint Co. Floors—filled, stained and waxed. Trim and sash—Wallhide, Pittsburgh Plate Glass Co. Wall sheathing-natural redwood, filled and waxed. Exterior: Shingles—Safety White, whitewash. All other surfaces, Double White, Samuel Cabot Co.

ELECTRICAL INSTALLATION

Wiring system—BX cable, General Electric Co. Switches—General Electric Co. Fixtures—special, Ritchie Electric Co.

KITCHEN EQUIPMENT

Stove-Standard Range Co., Toledo, O. Sink-Standard Sanitary Mfg. Co. Cabinet—wood, special design. BATHROOM EQUIPMENT

-Standard Sanitary Mfg. Co. Fixtures-

PLUMBING

Soil, waste and vent pipes-cast iron. Water supplywrought iron, Reading Iron Co.

HEATING

Hot water-hand fired coal. Boiler-tubular Red Flash, American Radiator Co. Fuel-coal, hand fired. Radiator-Corto. Hot water heater-coal fired, American Radiator Co.

51. HOUSE FOR MRS. CHARLES VICKERY, LAPEER, MICHIGAN

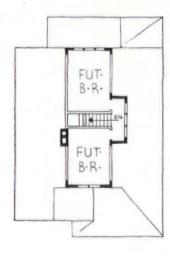


Asked his opinion on purchasing a poorly built, five-room bungalow for \$2,500, the designer offered to build the client a larger house, of better materials, for less, if she would allow him to try certain experiments. One involved insulation. Located on the edge of a 50-foot bluff, the house was exposed to a strong cold wind sweeping across the lake below. Instead of using sheathing, he nailed Sisalkraft building paper to the studs, then tacked it to the white pine siding along the horizontal seams. Thus he created a dead air space between the bevel of the siding, another between the Sisalkraft and the Celotex interior. No mill-made window frames were used. The exterior wood was oiled, then painted aluminum. Had it not been for the fact that all labor and materials had to be transported five miles from the nearest town, the cost of the house would have been even lower. Cost: \$1,750 (with no plumbing). Cubage: 15,060 at approximately $11\frac{1}{2}$ cents.

CORWIN WILLSON, DESIGNER







SECOND FLOOR

PLAN: The plan is unusual in the placing of the garage between the bedroom and the kitchen. The bath, shown between the two bedrooms, is actually a future room. A dry toilet was therefore appendaged on the bedroom closet. The plan also shows provision for future rooms on the second floor.

CONSTRUCTION OUTLINE

FOUNDATION

Walls-8 in. continuous concrete. Cellar floor-not yet finished.

STRUCTURE

Exterior walls—siding of 1 \times 10 in. No. 3 white pine, no sheathing, Sisalkraft building paper tacked on 2 \times 4 in. studs. Inside—Celotex finish with batten strips. Interior partitions—Celotex on 2 x 4 in. studs. Floor construction-1 x 3 in. No. 1 yellow pine single flooring on 4 x 4 in. yellow pine beams. Celotex ceiling. ROOF

Construction-yellow pine sheathing over 2 x 4 in. rafters. Finish-asphalt shingles.

CHIMNEY

Common brick, terra cotta flue lining.

SHEET METAL WORK

Gutters and leaders-Toncan iron.

INSULATION

Celotex on walls and ceilings.

WINDOWS

Sash-stock double hung and wood casements with stock storm sash. Glass-quality B, single strength. Screens-wood frame, hooked inside, galvanized mesh. STAIRS

No. 1 yellow pine throughout.

FLOORS

Living room, bedroom and halls-single flooring listed under structure. Kitchen and bathrooms—linoleum covered. Porches—No. 1, 1 x 3 in. yellow pine.

WALL COVERINGS

All rooms have Celotex, listed under "Structure."

WOODWORK

Trim-No. 1 yellow pine. Shelving and cabinets-No. 2 white pine. Interior doors-2 panel, yellow pine panels, white pine stiled. Exterior doors-French. Garage doors —one swing, two on track. HARDWARE

Interior-stock dull brass. Exterior-same with Yale & Towne locks.

PAINTING

Interior: Floors-stained and oiled. Trim-stained except in kitchen and bath where it is painted. Sashstained (oil). Exterior: Walls and sash-primed with linseed oil, painted 1 coat oil paint.

ELECTRICAL INSTALLATION

Wiring system-Romex. Switches-Bakelite. Fixturesstock.

KITCHEN EQUIPMENT

Stove—electric, Universal, Landers, Frary & Clark. Refrigerator—Frigidaire, General Motors. Sink—Standard Sanitary Mfg. Co. Cabinet—built-in.

PLUMBING AND BATHROOM FIXTURES

Not included in cost.

HEATING

Warm air.

52. HOUSE FOR STUART HOOD, INGLEWOOD, CALIFORNIA



Mott Pho

Direct, clean and reat, this house is constructed entirely of board and batten. The large skillfully handled bay window is the dominating feature of the facade, successfully balancing the vertical board pattern of the garage door. In its shape, the house was obviously inspired by the low-roofed, ranch type of house so popular in California but the picket fence, which creates a sense of privacy, derives from old Cape Cod. The house has been so planned that only the bedroom with the bay window faces the street. The plan is interesting in that the living quarters are separated from the utilitarian by a single—although often broken—partition. The main entrance has been placed on the side to allow a symmetrical wall surface in the living room. The garage is attached to the house but has no direct connection with it. Cost: \$4,700. Cubage: 13,750 at about 34 cents.

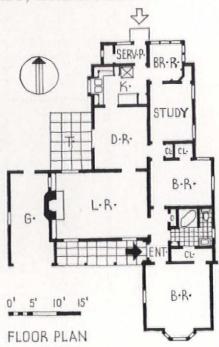
HENRY CARLTON NEWTON AND ROBERT DENNIS MURRAY, ARCHITECTS



ENTRANCE



BREAKFASTROOM



CONSTRUCTION OUTLINE

FOUNDATION

Walls-continuous concrete. Waterproofing-Suconem concrete, Super-Concrete Emulsions, Ltd., Los Angeles. STRUCTURE

Exterior walls—stucco on Douglas fir, 2 x 6 in. studding. Inside—lath and plaster. Interior partitions—2 x 4 in. Douglas fir studs lath and plaster. Floor construction—2 x 6 in. floor joists, 34 in. Douglas fir, diagonal sub-floor. Ceiling—2 x 4 in. Douglas fir joists, wood lath and plaster. wood lath and plaster.

Construction—2 x 4 in. Douglas fir rafters, 2 x 4 Douglas fir stripping. Finish—Longlife shingles, Fisk & Mason, Los Angeles, CHIMNEY ROOF

Common brick, smooth cement parged flue. Damper-H. W. Covert. SHEET METAL WORK

Galvanized iron, The American Rolling Mill Co.

INSULATION None.

WINDOWS

Sash—double hung, white pine. Frame—Douglas fir. Glass—single strength, quality A, Libbey-Owens-Ford Glass Co. Screens—fixed copper. Blinds—fixed louver. Venetian blinds—Columbia Mills, Inc. FLOORS

Living room, bedrooms and halls—½ x 1½ in. T. & G. white oak, select. Kitchen—covered with linoleum. Bathrooms—rubber tile. Porches—brick. WALL COVERINGS Bedrooms, kitchen and bath—wallpaper. WOODWORK

Vertical grain Douglas fir. HARDWARE

Interior and exterior—Russwin.
PAINTING

PAINTING
Interior: Floors—dark finish 1 coat, Duraco. Trim and sash—3 coats paint and enamel. Exterior: Walls—Cemolith, Waterproof 1 coat white, Super-Concrete Emulsions, Ltd. Roof—natural. Sash—3 coats paint. ELECTRICAL INSTALLATION Wiring system—black rigid conduit, Sherorduct, National Electric Products Corp. Switches—General Electric Co. Fixtures—direct, Roger Electric Co., Los Angeles. KITCHEN EQUIPMENT Stove—O'Keefe & Merritt, Los Angeles. Refrigerator—gas, Electrolux. Sink—acid resisting, Standard Sanitary Mfg. Co. Cabinet—vertical grain Douglas fir, built on Job.

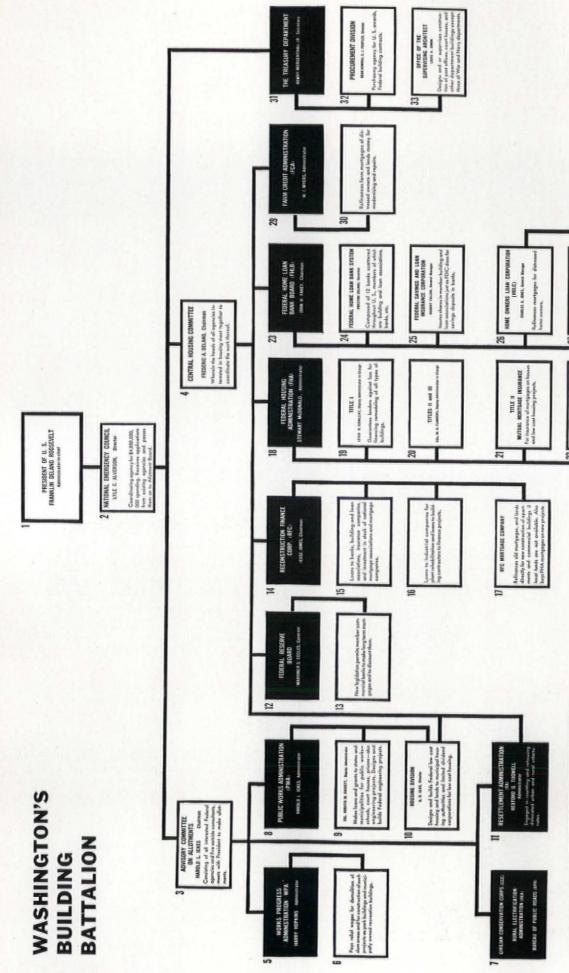
Job. LAUNDRY EQUIPMENT

Sink—acid resisting, Standard Sanitary Mfg. Co. Washing machine—General Electric.
BATHROOM EQUIPMENT

All fixtures by Standard Sanitary Mfg. Co. Seat—4 star, Brunswick-Balke-Collender Co. Cabinet—vertical grain Douglas fir, built on Job.
PLUMBING

Soil pipes—cast iron. Vent pipes—galvanized iron, mal-leable iron fittings. Supply pipes—galvanized iron, brass fittings.

HEATING
Unit wall heaters—Johnson, Los Angeles. Hot water heater—30 gallon, American Gas Products Corp.



MOVES OF THE MONTH

RECONDITIONING DIVISION
MARE : CHARLES, Dente
to for repairs and remodelis
on refinanced by HOLC.

TITLE III NATIONAL MORTGAGE ASSOCIATIONS

- 2. His advising over, Assistant Director Peter Grimm left for a Florida sunning and private life (see p. 3).
- 8. Setting a high for hope, Secretary Ickes told the Senate he could use an extra \$2.659.077,265 to finance three billion dollars worth more of schools, libraries, hopitals, streets, bridges, waterworks, sewer systems and light plants for which he has applications.
- Threw up the sponge on its Supreme Court appeals for the right to condemn land in Louisville and Detroit (see p. 4).
 John W. Slacks became provisional
- president, as ex-President Earl B. Schwulst took his new desk as first vice-president of Manhattan's Bowery Savings Bank.

 18. Administrator McDonald acquired
- 18. Administrator McDonald acquired two new special assistants. The men and
- their specialties: John W. Ahearn of New private in York's mortgage-lending Teachers' Insur- 1935 had ance and Annuity Association, theory; p. 4).
- George E. Palmer, ex-president of the New York State League of Savings and Loan Associations, building and loan contact.

FEDERAL SAVINGS AND LOAN ASSOCIATIONS 23. Disclosed that 55 per cent of all private institutional home financing in 1935 had been done under its egis (see

BUILDING MONEY

A monthly section devoted to reporting the news and activities of building finance, real estate, management and construction

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The Committee for Economic Recovery Draws Plans for Mass Production of Homes	366
An Analysis of the Forces Pushing Commercial Banks Into Mortgages .	370
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Chicago's Merchandise Mart Comes of Age; Its Conception, Its History, Its Men	372
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10.00

Man of the Month ALLIE S. FREED (see Page 366)

A BUILDING FORECAST FOR 1936

reveals the strong resurgence of residential building, a 34 per cent increase in total construction, and the logic of 5 per cent mortgage money.

During 1935 the total spent for building in the U. S. was approximately \$1,844,000,000. During 1936 The Architectural Forum predicts a total bulding expenditure of \$2,475,000,000, largest in five years. Spectacular leader in this rise will be the classification of residential building, which should register a 100 per cent increase over 1935 to tot up to a round \$900,000,000 for the year.

Method. A forecast must of necessity be written in three tenses: past, present and future. To the past belongs the record—which is listed on the opposite page. This record can be expressed in terms of cycles,

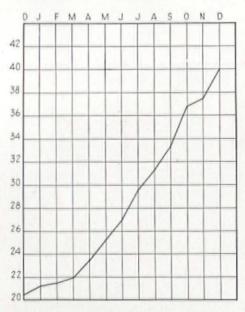
averages, or graphs. But in the effort to forecast, the cycles cannot be counted on to repeat, the averages to extend, nor the curves to continue. The record is nothing more than the jumping-off place from which one may spring to alight on some unspecified level in tomorrow. To give sensible direction to that spring from yesterday to tomorrow, the forecaster needs today. Here, reduced to seven, are the factors in today's situation which will influence that spring's direction. They are:

- 1. Supply of buildings.
- 2. Demand for buildings.
- 3. Purchasing power.
- 4. The relation of costs to rent.

- 5. The general financial market.
- 6. The activities of the Government in finance, in building.
- The cost and supply of mortgage money.

The forecast will first examine the record of the past. Next it will apply the relevant factors among those listed above first to residential building, second to non-residential building. The question of the supply and cost of mortgage money—which is perhaps the most important single factor of all—will then be examined in some detail. Finally, relating Today to Yesterday, The Forum will arrive at a detailed forecast for 1936.

1919 - 1935



THE TWELVE MONTH MOVING AVERAGE FOR RESIDENTIAL BUILDING during 1935 shows a happy comparison with 1934. The distance from any point on the curve to the base line will show, in millions of dollars, the amount by which the building for that period of 1935 exceeded the total average building for 1934. Had any month been below the average for 1934 the curve would have dipped. Extend the curve to February, 1936, and it will continue to rise. Remember February snows and March floods.

Building is notoriously handicapped by the lack of adequate record of its past activity. Even the F. W. Dodge Corporation figures, which are acknowledged the best in recording building volume, fail to include eleven States and rural building. Since that agency's figures are used here, an indeterminable increment covering these omissions must be added to every figure for a complete picture.

Annual building volume in the U. S., as far as this agency records it, has fluctuated from a high of about \$6,600,000,000 to a low of approximately \$1,250,000,000 over the past seventeen years. This period—the only one for which reliable statistics are available—is susceptible to classification as the post-War period. Repetition of any one annual figure within this period has been so infrequent that there is little justification for speaking of any particular year as normal. The variations were supported or precipitated by activity in specific types of building, each in unplanned rotation according to social and economic expediency.

Total construction contracts for all descriptions awarded in the 37 Eastern States in 1935 amounted to \$1,844,544,900 as compared with \$1,543,108,400 in 1934. This represents a gain of approximately 20 per cent. Although this appears, from a percentage basis, to have been a marked improvement, it is to be noted that the total construction for 1935 was only approximately 38 per cent as great as was the average annual volume of construction

during the years 1920-30. Actually, the recovery in building during 1935 did not begin until May. Since May, building activity has increased sharply, so that at the close of December, 1935, building operations were approximately 82 per cent of the 1920-30 average. It should be noted in this connection that if the building industry were to operate at no more than the current rate, the total construction during 1936 would be more than double that of 1935.

The major part of the improvement in building construction during 1935 occurred in the residential classification. Including both new building and alterations, the total was \$478,843,100, which represents a gain of 92 per cent over the total of \$248,840,100 reported for 1934. Still after this recovery, residential building operations for the year averaged only 20 per cent of the 1920-30 average.

Non-residential building (excluding public works and all utilities) totaled \$675,-488,600 in 1935, as compared with \$543,-031,800 in 1934, an increase of 24.4 per cent for the year. The average for 1935, however, was still only about 29 per cent of the 1920-30 average. Public works and all utility construction amounted to \$690,-200,000, or a decline of 9.6 per cent from the total of \$763,300,000 contracted in 1934. These two classifications are running at approximately 40 per cent of the 1920-30 average. Total building increased 20 per cent from 1934 to 1935. Residential building increased 100 per cent.

1919 - 1935

YEAR		TOTAL CONSTRUCTION	RESIDENTIAL	COMMERCIAL FACTORY	EDUCATIONAL	PUBLIC BUILDINGS	INSTITUTIONAL RECREATIONAL	PUBLIC WORKS
*1919		. \$2,579.9††	\$ 849.2	\$ 903.5	\$119.5	\$ 29.9	\$160.3	\$ 517.1
		100.0%	32.9%	35.0%	4.6%	1.2%	6.3%	20.0%
1920		2,564.5	570.1	999.5	172.3	39.6	183.0	599.9
		100.0%	22.2%	39.0%	6.7%	1.5%	7.2%	23.4%
1921		2,355.2	878.7	485.1	240.7	32.9	238.8	479.0
		100.0%	37.3%	20.6%	10.2%	1.4%	10.2%	20.3%
1922		3,343.8	1,340.1	774.3	302.3	36.0	282.3	608.8
		100.0%	40.1%	23.1%	9.0%	1.1%	8.5%	18.2%
1923		3,503.7	1,583.9	706.6	271.3	22.1	234.0	685.9
		100.0%	45.2%	20.2%	7.8%	0.6%	6.6%	19.6%
1924		3,873.1	1,844.0	704.8	317.1	30.2	304.1	672.8
		100.0%	47.6%	18.2%	8.2%	0.8%	7.8%	17.4%
1925		6,006.4	2,747.1	1,199.0	426.4	54.5	512.9	1,065.9
		100.0%	45.8%	19.9%	7.1%	0.9%	8.5%	17.8%
1926		. 6,380.9	2,671.1	1,392.1	381.1	67.2	529.0	1,340.4
		100.0%	41.9%	21.8%	6.0%	1.0%	8.3%	21.0%
1927		6,303.1	2,573.3	1,308.8	379.8	79.5	579.7	1,382.0
		100.0%	40.8%	20.8%	6.0%	1.3%	9.2%	21.9%
1928		6,628.3	2,788.3	1,393.4	399.0	76.2	506.7	1,464.5
		100.0%	42.1%	21.0%	6.0%	1.2%	7.6%	22.1%
1929		5,750.8	1,915.7	1,475.1	381.9	120.8	398.4	1,459.0
		100.0%	33.3%	25.7%	6.6%	2.1%	6.9%	25.4%
1930		4,523.1	1,101.3	885.4	376.1	139.8	369.2	1,651.2
	1111111111111111	100.0%	24.3%	19.6%	8.3%	3.1%	8.2%	36.5%
1931		3,092.8	811.4	435.6	228.8	181.3	273.0	1,162.8
		100.0%	26.2%	14.1%	7.4%	5.9%	8.8%	37.6%
1932		1,340.0	282.0	154.3	82.3	118.0	114.2	589.2
		100.0%	21.0%	11.5%	6.1%	8.8%	8.6%	44.0%
1933		1,250.0	229.0	252.0	39.9	50.9	85.9	592.3
		100.0%	18.3%	20.2%	3.2%	4.1%	6.9%	47.3%
1934		1,544.0	249.0	255.3	117.5	55.7	103.2	763.3
		100.0%	16.1%	16.5%	7.6%	3.6%	6.7%	49.5%
1935		1,844.5	479.0†	293.3+	150.0÷	108.0+	124.0	690.2
1000		100.0%	26.0%	15.9%	8.1%	5.9%	6.7%	37.4%

1933 - 1936

TYPE OF CONSTRUCTION	1933	1934	1935	1936
RESIDENTIAL, ALL TYPES	\$ 229.0††	\$ 249.0	\$ 479.0	\$ 900.0
COMMERCIAL-FACTORY	252.0	255.3	293.3*	375.0
EDUCATIONAL	39.9	117.5	150.0*	300.0
PUBLIC BUILDINGS	50.9	55.7	108.0*	90.0
ALL OTHER TYPES OF PUBLIC				
AND INSTITUTIONAL BUILDING	85.9	103.2	124.0*	160.0
PUBLIC WORKS-UTILITIES	592.3	763.3	690.2	650.0
TOTAL BUILDING CONSTRUCTION	\$1,250.0	\$1,544.0	\$1,844.5	\$2,475.0

^{*}Estimated on a basis of nine months' construction

^{††00,000} dollars.

CONDITIONING FACTORS

The record has demonstrated the extent of the recovery in building and the present position. We can now proceed with an analysis of the basic underlying conditions, which will be the determining factors in the future trend of the building industry. The prime questions to be considered are: 1. Is there a need for greater building? 2. Is there sufficient purchasing power available to permit an increase in building construction to satisfy the apparent need? 3. What are the present relationships between building costs and rents? 4. What is the status of the money market, of the mortgage situation? 5. What is the influence of Government activities in the building field?

RESIDENTIAL BUILDING

Supply. There is no question as to the amount of new building and repairs to old building now needed. Surveys made by the Federal Government show that approximately 37 per cent of the homes in the U.S. have been built for 25 years or longer. The reports also show that only approximately 35 per cent of the homes built during the last 25 years were constructed during the years 1925-29. During the last four years the annual loss of buildings by fire alone has been greater than the gain by new construction. But it has still been difficult to determine with any degree of accuracy the number of homes 40 years old or more that will be replaced in the near future. In some sections of the country, these homes are in good enough condition to be habitable for years to come. The supply of housing, although not exactly determinable, is certainly below present needs.

Demand. The increase in the number of families in the country has been much greater than the increase in the number of dwelling units constructed during the past five years. This is also a factor indicating the extent to which new building is needed, but it must be interpreted with care. All the statistics compiled to show this condition have been mere samples and have been heavily weighted by assumptions. Demand for building, closely correlated to supply, is great.

However, the more important consideration is whether the U. S. has the purchasing power with which to build new homes and make alterations or repairs. Is the average income sufficiently high relative to the cost of living to permit an investment of this kind? According to statistics

compiled by Economics Statistics, Inc., purchasing power* has increased from a depression low in March, 1933, of 53.8 per cent of the 1923-25 average, to 90.9 per cent at the close of December, 1935—after adjusting for the increase in the cost of living.

Will this purchasing be maintained during 1936? As indicated by chart No. 3, it is to be noted that demand (the actual volume of goods sold) has for some time been running in excess of the new supply (total production plus imports of goods in the U.S.). This condition still exists and indicates that production schedules will have to be increased; which means higher payrolls, a greater demand for farm products, the employment of a greater number of people in the service industries, and consequently a higher purchasing power. As far as 1936 is concerned, it is now quite evident that benefit payments made by the Government to farmers will be greater than they were during 1935. Under the new farm program, approximately \$500,000,000 will be distributed in this manner during this year. Besides this, there is approximately \$296,-000,000, which, because processing taxes have not been collected during the latter part of 1935, have not as yet been distributed but will be in the immediate future. Total payments of this type will

*Purchasing power index: Factory payrolls, income distributed within the service industries as measured by railroad gross income, the actual cash income received by the farmers for the marketing of crops and animals, and the distribution of rental and benefit payments made by the Government to the farmers. These factors have been weighted according to their importance in the total national income and then corrected for the cost of living. The result is the purchasing power index.

run between \$700,000,000 and \$800,000,000,000 during 1936, as compared with \$550,000,000 distributed in the preceding year. These statistics indicate that purchasing power will be increased sufficiently to permit an even greater expansion in residential building activity during 1936 than occurred in 1935 as compared with 1934.

Further stimulus is expected as a result of the bonus payments made to ex-soldiers. Assuming a Bonus cash outlay of \$350,000,-000 for homes, repairs, etc., it is estimated that approximately \$1,000,000,000 will reach the building industry, as a result of these payments. It is questionable as to whether the greater part of this stimulus will be felt in 1936 or early 1937. It is generally agreed, however, that a moderate expansion will take place this year due to the speculative building that will be carried out in anticipation of the demand arising from bonus payments. The national purchasing power has increased, is still increasing.

The next important point to consider is the cost-rent relationship. As is indicated by chart No. 1, this situation has improved greatly during the last three years. It is to be noted, however, that the situation is still far from satisfactory, but as is indicated by the purchasing power figures, it is reasonable to assume that vacancies will be reduced sharply this year and rents will be increased accordingly. On the other hand, the supplydemand position of the building material industries is such that costs probably will not be increased at so rapid a rate as rents. In fact the extreme competition in this field indicates that costs will remain about at the present level. The cost-rent situation, though still maladjusted, promises to improve.

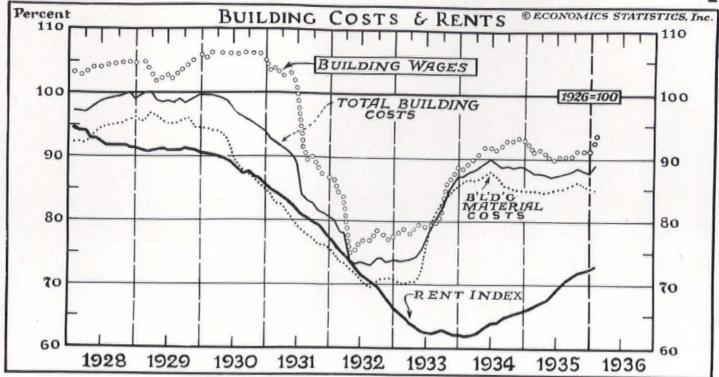
NON-RESIDENTIAL BUILDING

The amount of new industrial building which has taken place during the depression years is estimated to have about equalled the amount of depreciation and deterioration that occurred during that period. There has been no expansion; therefore, if business is to expand, it will be necessary to increase the volume of non-residential building at least in propor-

tion to the expansion in business. The supply-demand position of industry is strong. The purchasing power picture relative to the demand is strong. With the elimination of political factors which now act as limiting elements, business will expand materially, and profits will be increased. The rate of profits is the strongest factor in non-residential building.

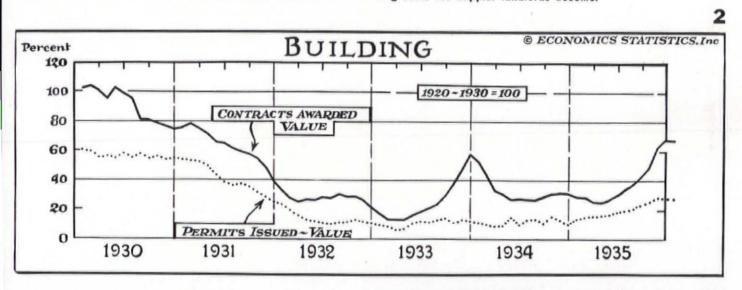
Experience shows that there is always a close correlation between the amount of new capital financing and industrial building activity. The following table indicates the extent to which new corporate capital issues have increased during the past year, and correlates very closely with the expansion in industrial construction during that period:





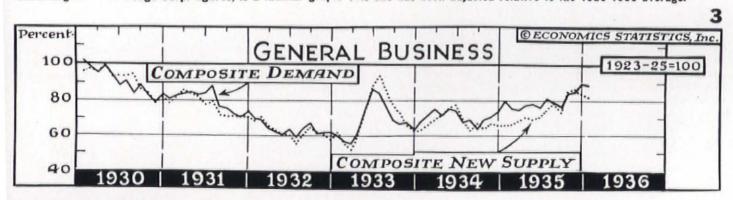
BUILDING COSTS AND RENTS

together form the cost-rent ratio. The nearer rents come to building costs the happier landlords become.



CONTRACTS AWARDED,

according to F. W. Dodge Corp. figures, is a familiar graph. This one has been adjusted relative to the 1920-1930 average.



DEMAND EQUALS

volume of goods sold. Supply equals total production of goods plus imports.

NON-RESIDENTIAL BUILDING-CON'T

New Capital Corporate Issues
January 5,267,000
February 6,500,000
March 7,945,000
April
May
June
July
August 29,794,800
September 45,086,920
October
November 33,288,860

We can expect new corporate capital issues to increase during 1936. Capital expansion promises a rise in the industrial-factory classification.

Non-residential building outside the in-

dustries (i.e., "public building") is likely to correspond closely with the Government policy. Expenditures for public building are near their peak and in view of the allocation of Government funds which have been made up to date, we can expect the actual construction during 1936 to continue at approximately the current level.

The total of \$255,000,000 is approximately the same as that allotted for building out of the first appropriation under the National Industrial Recovery Act. The volume of public building will be about the same as was the case in 1935.

The public utility industry during the 20's accounted for about 20 per cent of the total building in the U.S. During the depression while the percentage ratio of utilities' building has increased, the dollar total has declined, with only enough building being done to offset the depletion and depreciation. While the industry has grown in number of customers and quantities of products needed, it has not increased its facilities to supply these increased needs. There is a definite need for further expansion in this field. However, the extent of the expansion that will take place in this industry will be determined by Government policies. The industry will continue to mark time until the problem of Government competition with public enterprise is clarified.

MORTGAGE MONEY

Money Rates. Properly to understand the present mortgage situation you must first call to mind its past condition and so recognize the vital changes that have latterly taken place in the financial structure. The original intent under the Federal Reserve Act was that bank credit serve to finance the short-term working capital needs of industry. But during the late 20's this theory was discarded and bank credit was diverted to the uses of capital goods expansion and speculation.

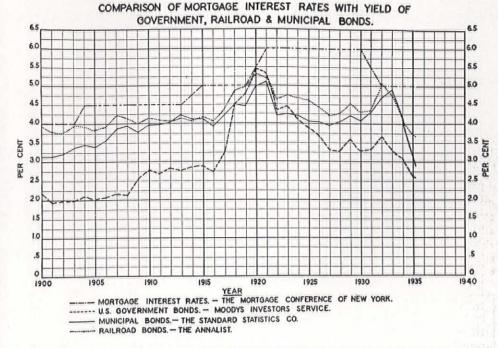
With the inauguration of the present Administration a significant change took place. One of its first steps was to establish an active open market policy. Money rates declined. This prepared the way for the spending program of the Government. Large amounts of Treasury securities were sold to the banks. This restored bank deposits and increased the liquidity of the banks. But note that bank deposits created by the purchasing of Government securities are inherently different from those created by speculative loans and investments. They are more stable in that they can only be liquidated by the purchase of Government securities from the banks by means of a budgetary surplus of the Treasury or by the sale of these securities to individuals by the banks. Thus have deposits created by the Government been substituted for deposits created by business. Concurrently drastic steps have been taken to control and minimize the use of bank credit for speculative and investment purposes by establishing control of loans on securities and enforcing higher investment standards. The net effect is that the Government now dominates the volume of commercial deposits through its spending program.

In addition, the Administration also dominates money rates through the control of the excess reserves of the banks. Excess reserves have been determining short term money rates which in turn influence long term rates.

During the recent past many bankers and institutional money lenders have shied from long term commitments because they expect an increase in money rates. But this class of investor ignores the fact that now the Government can, if it wants, keep money rates low. The reasons underlying the anticipation of higher interest rates are in most cases based upon the sequence relationship that prevailed in the past between interest rates, commodity prices and business activity. Under the old gold standard, money tended to flow from cheap centers to those where higher rates prevailed. In addition, business demands were a major factor influencing interest rates. However, with the Government strongly in the market, domestic credit conditions are largely isolated from the influence of the international flow of funds through the injection of a stabilization fund under Government control.

In light of these facts, what is the outlook for money rates? Consider first the need of the Treasury, which faces refunding operations of approximately \$14,000,-000,000 during the next five years. The spending program will also necessitate the raising of additional new capital. With a debt of over \$30,000,000,000, it is very unlikely that the Government would like to see an increase in money rates. Refundings at higher rates would increase the debt service. This would prove to be very unpopular with the public as it would mean higher taxes. There is one other important factor working for the continuation of low interest rates. It is the general belief that easy money stimulates recovery. With so many people unemployed and a recovery under way in the heavy goods industries, it is very unlikely that there will be any changes in this policy. It is thus obvious why the Administration favors low interest rates. Since it has the power to keep them low, there does not seem to be much possibility of a change for some years. The normal rate on mortgage money should approximate 5 per cent in the future instead of the traditional 6 per cent of the past.

Money Supply. Now consider the supply of mortgage funds available. On the one hand, we have the private institutions and on the other, the Government created agencies. Many of the private institutions (principally savings banks and insurance companies) have until recently indicated a reluctance to make loans because of concern over inflation and the anticipation of higher money rates. This partially rendered ineffective a supply of potential loans. At present, however, the savings banks and insurance companies are in a good position to increase their mortgage lending activities. The savings banks have been aided by the recovery in bond prices and consumer incomes. The insurance companies have been aided by the same factors; they have also benefited by repayments of loans on policies. Both types of institutions have been strengthened by the recovery in real estate values. Both savings banks and insurance companies are holding larger than normal amounts of Government securities, the excess holdings of which are merely awaiting higher yield investment opportunities to precipitate their conversion into cash. These factors do not indicate any shortage of mortgage money on the part of the most important private lenders. The pressure of a shortage of high grade securities and the low yields available is beginning to force the savings banks and insurance companies to look for higher yield investments in the home mortgage field. They are currently expressing a desire to lend money on real property, particularly in amounts of less than \$20,000. It should also be borne in mind that under the FHA the commercial banks and trust companies will become more important as lenders of mortgage money. The supply of mortgage money is increasing and relatively easy.



THERE ARE NO FIGURES

for mortgage money rates which cover the whole of the U. S. Those used in this chart are for New York City alone. Generally speaking these New York figures will anticipate country-wide trends slightly in their relative movements, though they will never touch the country high nor the country low.

CONCLUSIONS

Step by step, the fundamental forces determining the trend of building activity have been considered. Briefly summarizing the foregoing analysis, the following conclusions can be made:

- 1. There is a great shortage in residences.
- 2. The national purchasing power has increased sharply and warrants expansion in residential building.
- The cost-rent situation has improved during the past year but still remains badly maladjusted. However, conditions indicate a rapid improvement during 1936.
- 4. Money is plentiful and investment conditions indicate that the mortgage field will become a more important medium.
- 5. Corporate financing is increasing.
- Profits have increased and the outlook is encouraging.
- Government activities in building and finance are scheduled to continue at a high rate
- 8. Improved business means better State, county and municipal conditions, and consequently a greater volume of construction.
- 9. Irrespective of political handicaps the public utilities field must embark on a greater expansion program.

FORECAST

RESIDENTIAL:
HOUSES, APARTS.,
HOTELS

COMMERCIAL: FACTORIES, STORES, OFFICE BLDGS.

EDUCATIONAL:

POST OFFICES, JAILS: MUNICIPAL, COUNTY

ALL OTHER PUBLIC BUILDING: INSTITUTIONAL, RECREATIONAL

PUBLIC WORKS, UTILITIES:

Supply low—demand high—purchasing power up—cost-rent ratio improving.

Vacancies low—demand growing slowly—corporate issues up.

Federal 1936 allocations above 1935.

Federal allocation steady.

Reflects residential building—steady till 1937-38.

Federal building steady—private building slow.

TOTAL

\$900,000,000

375,000,000

300,000,000

90,000,000

160,000,000

650,000,000

\$2,475,000,000

GOAL: 750,000 HOMES A YEAR

The Freed Committee visions a way to produce a good house and lot for less than \$6,000.

To most casual observers the activities of the Committee for Economic Recovery remained last month little more than a vague amalgam between a taxicab tycoon and 40-odd \$1,000,000 building companies. It was in September, 1935, that that small but irrepressible body had forwarded to President Roosevelt a report somewhat wistfully titled "Home Sweet Home-A Fireside for Every Family." In November 1936, the Committee followed up with a second presentation, the "Home Building Program." On January 14, 1936 there was released a third called "Methods for Men—Money—Management and Gov-ernment." Last month they released a fourth "Public Housing to Supplement Private Enterprise." Although a fifth report is yet to come, these four hold between them the kernel of what is actually one of the most comprehensive and least understood plans ever offered the Building Industry. If it did not always seem practical, certainly it had the virtue of sound logic to recommend it.

The Committee is neither new nor a novice at issuing reports. It was conceived in the hot summer of 1934 at Mamaroneck, N. Y., when smart young President Allie S. Freed of Paramount Motors Company gathered a few friends in his summer home to do some worrying about the state of the nation. Freed and his cronies soon decided to give their cerebrations a more official air: on November 5 they became incorporated in Albany as The Committee for Economic Recovery. President was Allie S. Freed.

On March 23, 1935 the Committee issued its first official expression. It was a report addressed to the President dealing with methods of stimulating the heavy industries. Consisting of some conclusions expertly drawn from ready-made statistics, it was formally titled "Recovery or Radicalism?—A New Civilization in the Making." Significantly, it devoted a page to the possibilities for recovery inherent in the building industry.

Two months later the Committee revealed its versatility by issuing "Long Live King Cotton—An Essential to the New American Civilization." Produced at the height of the cotton crisis, the report was addressed to Secretary of Commerce Roper and advocated a ten cent Government loan on cotton. The ten cent loan was subsequently adopted.

There then followed an interim of

silence. During the summer of 1935 Freed paid a flying visit to England to inspect the phenomenal housing boom that country was enjoying. Meanwhile the personnel of the Committee continued to grow in numbers and in prestige, and to invite a certain amount of speculation. A canard is the rumor that each new member must pay \$2,000. Actually the top limit which any one member may contribute to defray costs of operation is \$3,000; and actually members have contributed everywhere from the limit to a penniless expression of approval. Invitation to membership is extended only with the approval of the Board. The listing on p. 367 is only a partial one.

Upon his return from England the ebullient Freed began convincing the Committee that housing held the greatest possibilities for industrial recovery in the U. S. Convinced, the Committee sought help from experts. The assistant Regional Director of the Federal Housing Administration in the New York region, R. M. Cheseldine, was called into consultation. And presently there emerged the Committee's third chef d'oevre, the famed "Home Sweet Home" report.

Program. The Committee's report is factmarshalling of the canniest kind. Calling for a U. S. home building program of huge proportions, it justifies this program in a preamble on the dual basis of economic recovery and the fact that such a program will provide for the nation "the finest type of social insurance." Basic assumptions from which the report proceeds are that on the one hand 93 per cent of the population had incomes of less than \$3,000 in 1933 and on the other that the impending housing shortage will create a demand for an annual building program of 750,000 homes a year for the next ten years. Of these twin statistics neither can be called so wide of the mark as to invalidate their one startling conclusion: the man who can build a good house priced within the means of the less-than-\$3,000 income class will tap a mammoth market. The immediate goal of the Committee thus became the production of good houses which, with lots, would sell for prices ranging from \$2,500 to \$6,000. To achieve this goal the Committee then outlined a fourfold schedule for Industry, Labor, Finance and Government.

Industry. Allie Freed and most of his companions on the Committee have behind them a lifetime of experience in highly organized and unified industries. It was therefore inevitable that the first fact to strike them in their study of the building industry was its enormous and stumbling state of disorganization. To the Committee the initial step was therefore obvious. If any economies of operation were to be made they could only be effected through the operation of large, well-capitalized companies, comparable in size and organization to say, Committee Member F. W. Lovejoy's Eastman Kodak Company. What was actually proposed was the creation of 40 building companies spotted all over the country, each one with a minimum capitalization of \$1,000,000. These companies, if and when created, are to take the form of operative building concerns. Each company is to undertake the construction of three planned communities, erecting in each community from 200 to 2,000 homes, building not simultaneously but progressively. The price range: \$2,500 to \$6,000. These homes are to be both for sale and for rent.

The economies to be attained by such mass construction are obvious in theory to anybody in the building industry; but the full implications of quantity construction may well prove a revelation to many an old hand in the industry. The members of the Committee like to dream of the results of the placement of a combined order from several companies for 10,000 heating units with one firm—the units to be manufactured under one contract, and delivered as needed. They feel sure, and with some justification, that orders of such magnitude will spur manufacturers to the production of a simplified unit, hope to see the final price appreciably reduced.

Labor. To secure the most effective utilization of labor, the Committee turns once again to that delicate but promising arrangement whereby the unions are to agree to work for a lower hourly wage in return for steady employment—the same solution which Peter Grimm has been quietly advocating in Washington for the last six months. The idea is extremely pleasant and might possibly prove acceptable to labor, providing the existence of million dollar companies is assured; otherwise it is nothing more than an old dream.

In its recommendations, the Committee

also includes in its references to labor the suggestion that "more efficient methods of craft division" be used. The allusion is not amplified but the Committee obviously has reference to a move which will arouse some antagonism in the feudal ranks of trade unionism: a reduction in the number of unions in the building trades, with a view to eliminating such boondoggling squabbles as now take place over the installation of a piece of pipe or a section of roofing. Since the unions have been accustomed to spread their labor by this wasteful process, it may take some persuasive logic to convince them that as a class they would eventually stand to profit through such a move.

Finance. Commendably, the Committee recognizes that a mortgage is just as much a part of a house as its cellar. The high cost of the old time short-term mortgage. studded with renewal fees and service charges, has been a major hurdle to the would-be home buyer. In brief, what the Committee would like to see for home financing is a twenty-year mortgage with 90 per cent coverage at 4½ per cent. Such mortgages as are insured by the Federal Housing Administration should, says the report, pay a premium at a rate of one quarter of 1 per cent per annum on the declining balance. This type of financing would reduce the current FHA gross cost of 6½ per cent to 4¾ per cent. The order is a big one.

The twenty-year amortizing mortgage is now a widely accepted form of encumbrance but a 90 per cent coverage is definitely not. To make such a high coverage feasible the report outlines the following modus operandi: private finance is to extend credit up to 80 per cent on the basis of an FHA insurance, as it does today; the Government is to extend the additional 10 per cent in the form of a continuing mortgage at 3 per cent, this encumbrance to be amortized over the twenty-first, second, and third years. The standard objection to this form of financing is that a coverage which runs up to 90 per cent removes the builder's equity. The Committee has for this standard objection this stock answer: When all construction is done by the posited million dollar corporations (who must be dependent for profits on continuing sales) operative building would be conducted on a higher ethical plane. The answer is sound and not to be denied. But to be deduced from it is the startling conclusion that the Committee looks confidently to the day when the small builder will have been forced out of business.

Four and a half per cent mortgage money is a cry as old as Free Silver. To get that kind of money on an 80 per cent covered mortgage—for the Government is to supply the cash for the next 10 per cent—the Committee is prepared in the last analysis to rely on the natural laws

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of capitalistic competition. Starting from the position that lower money rates must come from cheaper money rather than from a reduction of the legitimate 2 per cent profit which building and loan associations now average on their 51/2 to 6 per cent money, the report urges that money placed with building and loan groups be regarded as savings rather than as investments. The expected return to the saver would, of course, be lower than that to the investor, and thus cheaper money would be made available. But people place their savings where they can find the most stability and a guaranteed increment on interest, two features which building and loan associations neither historically possess nor claim. To achieve these the report suggests that the associations rearrange themselves into fewer and larger units, headed by correspondingly bigger names, a move calculated to make them resemble as closely as possible savings banks, and so attract cheap "savings" money.

So far the mortgage moves projected by the report are pure theorizing, entirely dependent upon the cooperation of the associations themselves. But to make theory into fact the report suggests a subtle lever. Suppose, it says, that one of the proposed million corporations requested a blanket mortgage for some three million dollars, asking 4½ per cent money. In the economic nature of business they would certainly get that money some place; and the building and loan associations might well be persuaded to band together in order themselves to corral enough capital to participate in such a satisfying piece of business.

Government. Intensely individualistic by nature, the Committee evinces in its report an obvious desire to keep Government control, if not Government participation, as far away from its schemes as possible. However, it recognizes that to the Government must be allotted certain definite and important functions. First of these deals with the initial financing of the million dollar building companies. Looking for a minimum capital equity of \$250,000 from the original promoters of

each company, the report suggests that the remaining \$750,000 be raised by the issuance of 5 per cent debentures or 6 per cent preferred stock. To insure a market for this paper, the Committee would request the Reconstruction Finance Corporation to underwrite the issues, thus not only providing the capital needed but pegging the market price of the companies' stocks until their value had been demonstrated to the investing public.

Legally, the RFC is now allowed to invest only in companies already doing business. Whether or not it will consider that mere incorporation constitutes doing business is an interpretative question whose answer lies entirely in the desires of Chairman Jesse Jones. If he feels that the companies offer a sound investment, the chances are that he will also rule that investment legal for RFC money.

Not nearly so hopeful is the case which can be made out for the Committee's proposal to have the Government assume the continuing mortgage from 80 to 90 per cent. That there is some necessity for 90 per cent loans on purchases of homes for the lower income groups seems fairly well established. But by the report's own estimate the burden in financing which the Government will assume in taking on the 10 per cent encumbrance will amount to 115 million dollars a year. The report suggests that the Government continue this form of financing for three years-at a total cost of some 350 million dollarsclaims that at the end of this period the private building corporations will themselves be able to undertake the financing of the added 10 per cent. The Government agency suggested is the HOLC. which can now by law purchase just such mortgages. Question: Will the building companies be anxious or even able to assume a low rate continuing mortgage at the end of three years? Question: Can the billion dollars credit of HOLC, now impounded by Presidential edict, be released?

Sensible of the fact that Government insurance of mortgages makes for both high coverage and low interest rates, the Committee nevertheless feels that the charge of one-half of 1 per cent annually on the loan for the FHA insurance pool is too high. Pointing out the undeniable fact that such a rate amounts to 10 per cent of the mortgage, the report advocates its reduction to one-quarter of 1 per cent of the decreasing balance on the grounds that FHA will not refund interest under the mutual plan as they have announced. Noteworthy is the fact that such a move would entail legislation in Congress, that the best results that can be expected must represent a compromise with the Committee's goal.

Since the Government's presence in the building market in any form whatsoever is generally disturbing to private capital, the Committee's report undertakes to place a definite limit on the Government's activities. The recommendations take the position that the Government should help only those whom private industry cannot profitably care for itself. Arbitrarily, they place the maximum income of those people whom the Government should help house at \$1,000. Realistically, they make the point that it is impossible for the Government to undertake housing subsidies for any higher income group because numerically the group would become too large. [See Arch. Forum, Aug. '35, p. 90.]

Gritique. There are many objections to the Committee's plan. Where can enough men with money be found who are willing to risk the flotation of million dollar building companies? Will there result from such companies the startling economies which

DEMAND Net increase in number of families	5,000,000
Cumulated shortage since	
1929	2,500,000
Units to be demolished	1.000.000
Fire, etc.	1.000,000
Necessary reserve of homes	650,000
	10,150,000
SUPPLY	
Vacant available homes	750,000
Houses that could be sub-	
divided	500,000
Multi-family homes	1,400,000
	2,650,000
Actual need for new homes,	

The Report Estimate for Homes

the Committee envisages? Can Labor in fact be made to cooperate with the plan, or will the unions sit back until the companies are organized and then force the issue at their own terms? Is a 90 per cent coverage of mortgages practical? Is $4\frac{1}{2}$ per cent money actually obtainable? And above all, is not the home so personal a matter, so subject to personal whim, as to be incapable of standardized production?

To the credit of the Committee it can be said that they realize these weaknesses and acknowledge the potency of the objections so raised. The general rebuttal is that while no one factor-in private initiative, private finance, Labor or Government-can become the cure-all by itself, nevertheless if all four parties were simultaneously to agree to do their parts the individual objections would bulk small. Thus if Labor were to agree to accept lower hourly wages in return for steady employment, private capital might more easily be induced to invest in building corporations; if the RFC underwrote the companies' debentures, the public might invest; if the companies promised large financing, institutions might lower interest

Even more basically what the Com-

mittee insists upon is a new perspective in regard to the building industry. They have realized that building is not one industry but many small businesses; they believe that building can be made more profitable when operated as one industry; and consequently they have cast all their thinking in a form molded for one industry rather than to many small businesses. The perspective may be puzzling to many within the building ranks. But it should not be impossible of adoption.

More important is an objection based on the assumption that the Committee will in fact be able to put their ideas into effect. Suppose that during each year for the next five, some 500,000 houses priced below \$6,000, each offering more than current house for the dollar, were to be placed on the market. The effect on the present crop of mortgage holdings, while debatable, might be extreme. On the one hand there is the fact that owners of \$8,000 houses could move into the newer. cheaper, better houses and pay less interest on less capital investment-pay, in point of practice, less monthly rent. But on the other hand-and this is no inconsiderable factor in its own right-the desire of the home owner to retain his old home at any price is notorious. As the Committee itself points out, better than 50 per cent of the nation today still own their own homes after the most severe depression the country has ever seen.

Man. A plan is just a plan. Without execution to follow, it might just as well have never been written. It is pretty, full of theory and signifies nothing. Nobody realizes this better than the Committee.

But in its preparation lies much of its possibility of success. It was prepared not by one man but by many men, both within and without the building industry. John D. Biggers, dynamic President of Libbey-Owens-Ford Glass Co., made many flying trips from Toledo for one-day sessions around the conference table. J. A. Callahan, of the Briggs Manufacturing Company, in Detroit, put himself and his company's experience at the Committee's service. Dean Wallace B. Donham, of the Harvard School of Business Administration, Lawrence Sloan, Vice President of Standard Statistics Co., put specialized knowledge and accumulated facts on the conference table. Men like T. S. Holden, Vice President of the F. W. Dodge Corporation, and Stephen T. Voorhees, President of the American Institute of Architects, gave days of service. But none gave more time and effort than Allie Freed. In the minds of many, this activity has raised the question of his motives.

At 44 Allie Freed is an intensely energetic, youthful man who has made two fortunes and lost only one. His father was president of the LaFrance Novelty Company, a sporting goods firm, when Allie went into the business in 1915. In 1923 a



Raymond Minshall Cheseldine-Fly-wheel and Bumper.

George Nelson

successor company named Alphen, Inc. (with young Allie by this time its president) went into involuntary bankruptcy and Allie Freed catapulted into the automotive industry as head of the Luxor Cab Manufacturing Company. His Luxor Cab was the first of the luxury models in the business. Manufacturing them and selling direct to drivers he reaped himself a quick fortune.

By 1926 however, Luxor had become smothered under a pile of commercial paper and Freed found himself forced to start all over again. This time he organized a set of companies to manufacture and sell Paramount taxicabs. His business held together, and he was at one time considered so valuable to the company that it insured his life for one million dollars.

Today Freed is no longer actively engaged in the automotive business. Feeling that competition has become too stiff in the depression to permit a decent profit, he has ceased production. Paramount Motors Company is still in existence, still highly solvent, but engaged only in the collection of some \$250,000 of receivables. Under the assets are listed better than \$1,000,000 in cash and marketable securities (at market). Capital stock and paid-in surplus amount to \$1,500,000. Freed's interest in the company today runs to about 80 per cent.

Paramount Motors insured its President's life not because he was an expert mechanic—which he is not—but because he is reputedly one of the best salesmen in the industry. To supplement that he is possessed of an apparently inexhaustible fund of energy, customarily working fourteen hours a day. When Freed found his way into the building business he brought with him these two qualities of salesmanship and energy, and little more of immediate value. But in eighteen months he has so familiarized himself with the problems of building that today he can hold his own with the shrewdest.

Freed owns a development on Long Island, a fact which many an observer has picked as the explanation for Freed's interest in housing. Actually the development contains seven houses. It is a commercially defunct proposition which he took off his brothers hands when expenses ran too high. But if you ask him point blank why he is interested in a program of home building his answer is likely to be a vague circumlocution about the romance of new industry. The truth seems to lie in the relatively disinterested but personal fact that Allie Freed likes to be a leader of men. And he alone of the Committee has nothing but the plan to occupy his time.

Alter Ego. Raymond Minshall Cheseldine became Secretary of the Committee last month. But he has been in and out of the Committee offices for better than a year, is its only considerable full-time employe. Cheseldine started out as publisher of a string of small county newspapers in Ohio, got his first knowledge of finance by working part time in his father's small town bank. He served overseas during the War, returned to enter politics, and in 1921 was appointed by the Governor to an interim vacancy as Budget Director of Ohio. The appointment lasted two years and marked the beginning of a deep study of the mortgage market. In 1925 he was called to Washington by the War Department to work on the financial questions involved in the revision of the National Defense Act, stayed there for four years. In booming 1929 Standard Statistics picked him to run its "Building, Real Estate and Related Lines" department, farmed him out in 1931 as consultant for the Banking and Industrial Committee, a body familiarly known as "The Twelve Apostles," whose efforts to stem Depression were to be confined largely to collecting statistics in three rooms at Manhattan's Federal Reserve Building.

But presently New Dealers like Winfield Riefler and Mathias Daiger were calling on this group for ideas and figures to help in the framing of the National Housing Act and Cheseldine became so interested in the possibilities of the idea that in 1933 he asked for and was given a job in the New York office of FHA. There he stayed officially until last month.

Today at 43 Cheseldine is a dark, intense man with considerable talents and an excellent perspective in the field of mortgage finance, a lesser degree of experience in the problems of construction and labor. He helped formulate the Committee's housing program, believes in it. His chief function in the activities of the Committee is to act as a combination flywheel and team-mate for the enthusiastic activities of Chairman Allie Freed. He feeds him sound theory, criticizes loose thinking, side tracks enthusiasts with housing panaceas, drafts and redrafts with a deft hand his own ideas and those of the Committee.

Future. Though it may not be the most difficult of attainment, the most essential item in the Committee's program for the building industry is the creation of its 40 building companies. To date no company has made its bow, and for the very good reason—among others—that the Committee does not feel the time ripe. It realizes that the greatest obstacle to be overcome is a psychological one: the inability of labor and building to think of the industry as a national affair. In its report as we have seen, the Committee stresses the point that all four elements of finance, management, Labor and the Government must be brought into substantial agreement on the plan before it can be put into operation.

Logically and inevitably, the Committee's next step must take it to Washington. For there is in the program a small but ineluctable requirement for Congressional legislation: FHA insurance must come down; RFC, with or without legislation, must agree to underwrite the building company debentures; the HOLC must be permitted to assume the continuing mortgage. A bill embodying at least two of these measures must be passed before anything but oblivion can come the Committee's way. And such a bill would serve as a rallying point and a testing ground for a program which aims so high that it can fall short of its objectives and still have much to its credit.

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COMMERCIAL BANKS INTO MORTGAGES

A debated phenomenon explained by a Bankers Trust economist as the result of fundamental changes in commercial banking.

LAST month in Manhattan some 500 representatives of the nation's biggest life insurance companies, savings and commercial banks and building and loan associations convened for the third annual meeting of the Mortgage Conference of New York. The first of its kind to be formed, the New York Conference has made the greatest advances in its efforts to develop more scientific methods of building finance, usually pans out at least one valuable nugget of thought for its members to take home. Best nugget of this year's meeting was an expert definition of the changing role of commercial banks given by Economist J. H. Riddle of the Bankers Trust Company.

A dark puzzle to many has been the Government's new policy of extending the lending terms and radii of commercial banks in a fashion calculated to push them further into the mortgage field when that field is already equipped with a number of excellent financing institutions. To clarify the issue Economist Riddle found it necessary first to trace the history of commercial banking through the last three decades.

Economist Riddle's thesis was that commercial banking in this country has changed from a commercial deposit, shortterm lending business to one of savings deposits and long-term lending. The thesis is diagnostic, not theoretical.

Changing Portfolios. Mr. Riddle left his listeners no doubt but that commercial banks have been getting further and further away in practice from true commercial banking. His statistics showed that commercial loans had decreased from about 60 per cent of total loans and investments in 1920 to less than 20 per cent in 1935. And meanwhile capital assets, including collateral and real estate loans, had increased from about 40 to 80 per cent. This trend, Mr. Riddle said, had not been confined to any particular type of institution, or to any particular section of the country. "We do not have a commercial banking system today in the narrower sense of that term," he declared.

This change in make-up of commercial bank portfolios he ascribed to: 1) speedier processes in industry and transportation and the consequent smaller need for working capital, 2) changes in the methods of corporate financing, 3) easy reserves and pressure on the banks to expand, and 4) the growth of time deposits.

Expanding upon Points 1 and 2 as factors explaining the reduction in commercial

loans, Mr. Riddle declared that improvements in manufacturing had greatly shortened manufacturing processes, thus reducing the amount of working capital in use. Likewise, faster transportation and improved inventory control have reduced the amount tied up in raw materials and finished products. Hand-to-mouth buying. installment financing and the buying of receivables by finance companies were other factors listed in this regard. On another front, short-term borrowings were reduced by new methods of financing. Aided by easy securities markets, many corporations not only greatly reduced their bank borrowings but many of them accumulated liquid surplus funds as well.

The trend toward capital assets was further assisted by easy reserve conditions, which encouraged the expansion of bank credit in every available form.

Time Deposits. These forces which are driving commercial banks to other pastures have been fairly clear to financial observers for some time. But what has not been recognized has been the very real basis, from the standpoint of money intake, upon which these banks are set to do a mortgage business. This situation Mr. Riddle ably described in discussing Point 4.

Probably the lack of commercial loans and the better return offered by capital loans have been the true cause of the demonstrated rise of capital assets to 80 per cent of total assets, but it would not have been possible without a concurrent increase in time deposits. Time deposits, including for the most part savings ac-

counts, composed only 5 per cent of total national bank deposits in 1900. By 1920 that figure had increased to 25 per cent, and by 1932 to almost 50 per cent. At present, while the amount of time deposits remains approximately the same, their ratio to demand deposits has declined somewhat, due to an increase in the latter caused by the Government's borrowing from banks. But this condition is widely considered temporary.

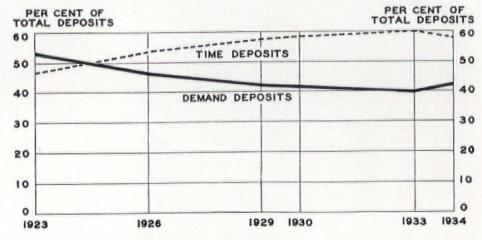
Even more striking are the figures for smaller-than-metropolitan centers. The study by the New York Bankers Association reveals that time deposits of the commercial banks in New York State outside of New York City even now aggregate nearly 60 per cent of total deposits (see chart). Almost the entire growth in deposits of national banks from 1920 to 1929 was in time deposits, which more than doubled in those nine years.

Today. All this increase in time deposits was not accomplished without some competition for savings accounts. Hereby interest rates were driven upward, earnings lowered. And the one source of return into which the banks have been driven—Government bonds—has of course helped little. The banks are at a profit impasse which is driving them further toward capital assets. And this is likely to mean further entrance into the mortgage field.

Mr. Riddle listed the liberalizing aspects of the Banking Act of 1935, the campaign of the Federal Housing Administration, the adoption of the amortized mortgage, and "great improvements" in building methods as further factors making for this increase in commercial bank lending.

Referring to the changes in building methods, he declared that "If this improvement continues during the next few years as rapidly, for example, as the improvement in the automobile during the past ten years we might have a big expansion in housing because the would-be home

DEPOSITS OF COMMERCIAL BANKS IN NEW YORK STATE OUTSIDE NEW YORK CITY



The Rise of Time Deposits in Typical Banks

owners simply could not resist the values. If some such development occurs on some basis of mass production with a standard mortgage, it is not at all improbable that the commercial banks might be an important factor in financing it."

"Streamlined Model." Discussing liquidity, Mr. Riddle admitted that in times of stress there is little difference between demand and time deposits. As possible remedies he listed the following: 1) a vastly improved real estate loan and real estate



Nation-Wide

Bankers Trust's Riddle

bond, 2) segregation of savings and commercial banking, 3) segregation of the assets in two departments, 4) a change in the contract with the depositor by the issuance of debentures or certificates of deposit with maturities of one year or more rather than passbook credits, and 5) the building up of special reserves, giving more recognition to the risks involved.

"In conclusion," said he, "it would seem that strong forces are pressing the commercial banks to invest profitably an increasing amount of idle funds. The lack of a sufficient volume of short-term loans of first quality at survival rates of interest is driving these banks to a choice between long-term investments and real estate loans or idle and excess reserves. It is asking too much of human nature to expect bankers to jingle all this money in their pockets for long. They probably won't do it. They will make real estate loans if good ones are available on amortized terms at satisfactory rates. And when the depositors again want their money faster than the loans liquidate, the Federal Reserve Banks will take them over and give the banks what the depositors are demanding.

"The old model of banking has been pretty well discarded in favor of the new streamlined model with all the new gadgets. The new model looks grand to many of us, but whether we like it or not we have it and must ride in it. Let us hope that it has non-skid, blowout-proof tires and that the brakes will not fail when we try new speed records."

Riddle. For several years outside the pale of Capital banking thought, Economist Riddle outlined the position of commercial banks with a clarity much in contrast to the desultory manner in which Federal Reserve Governor Eccles justified the realty provisions in his Banking Act of 1935 (Arch. Forum, March, 1935, p. 258).

After three years at Princeton's graduate school, a year of teaching at Dartmouth, and two years at the Federal Reserve Bank of New York, Mr. Riddle went to Washington to organize a research division for the Treasury Department. Later he left for Germany to serve as economist to the Experts Committee on Reparations. He returned in 1930 to help prepare the report of the Federal Reserve Committee on Branch, Group and Chain Banking, which never has been published. At present Mr. Riddle is economist for the Reserve City Bankers Association's Committee on Banking Law and Practice. He joined the Bankers Trust in February, 1934

A mild man with obviously little desire to wax political, Economist Riddle frankly admits that he is new to the urban mortgage situation, having devoted the most of his time in Washington to the study of other banking matters. He emphasizes that he is pushing no cause, but merely stating the facts he sees in the current banking set-up.

N. Y.'s MORTGAGE BANK

loses purpose as the Legislature withdraws its sting.

Decorated with the Governor's sponsorship, the bill to provide New York State with a mortgage bank, and the U.S. with a model new means for participation financing, was led late month before last into the New York Legislature.

This was the bill which after a year of study, the commissioners in charge of the wreckage left by New York's guaranteed mortgage system had framed to answer the five-year-old question with a new start patterned after European precedent (Arch. Forum, Feb. 1936, p. 132). Subjected to lengthy discussion in the joint committee, it had been changed in several important respects from its originally recommended form.

Most questionable of the changes was the committee's elimination of a clause prohibiting the public sale of bonds and mortgages on real estate, or participations therein, excepting by a mortgage bank. It was argued that the clause was unconstitutional. As the absence of this clause permits the continued issuance of guaranteed mortgages and real estate bonds, both bad actors in real estate financing of the past, its elimination materially emasculates the bill. A strong attempt to reinstate the provision by amendment was predicted.

Other changes, generally considered to the good:

- 1. Required capital and surplus reduced to \$4,000,000 for New York City banks, to \$2,000,000 in cities of between 500,000 to 1,000,000 population, and to \$1,000,000 in smaller communities.
- 2. Debenture limit reduced from twenty times capital and surplus to fifteen times capital, surplus and reserves.
- 3. Lending limit changed from 60 per cent of appraised value on all types of property to 66% per cent on non-specialties, and 50 per cent on specialties (hotels, theaters, factories, etc.). Not more than 20 per cent of total assets are to be loaned on specialties.
- Time in which to dispose of foreclosed property extended from eighteen months to five years.

The bill in its broad outlines had been widely approved by New York mortgage men last month. Most important general criticism offered was that there is no need at present for another source of mortgage money. It is a widely accepted fact that existing lending institutions have all the money that is needed for mortgages, and then some. Further, many an observer felt that the creation of a mortgage bank would merely afford another lap on which to dump the same old problems inherent in mortgage finance.

Mortgage bank debentures have come in for considerable comparison with the certificates issued by the old guaranteed mortgage companies. One specific criticism of the mortgage bank plan was the charge that, like the guaranteed mortgage companies, the banks would with difficulty be able to meet contract interest rates in the fluctuating money market. Regular banks, it was pointed out, can with ease reduce their interest rates to depositors. Besides, it was charged that the mortgage banks would have the same difficulty in meeting maturities as the guarantee companies did.

To this the Commission's program gives the answer of strict safeguards, such as the enforcement of staggered maturity dates, required amortization, carefully regulated reserves, and like operating methods never put to test together in this country. From Europe's experience the Commission has satisfied itself of the efficacy of such safeguards.

This whole paraphernalia seemed purposeless, however, if the traditional agencies for participation financing were to be allowed to stand.

¶ Notwithstanding the fact that New York's mortgage bank bill carries a rider providing for the registration of all titles by the State, three of New York's old title guarantee companies were preparing themselves last month for continued performance.

In a surprise offer, Aetna Life of Hartford proposed to buy Brooklyn's virile Home Title Guaranty Co., the substantial old Lawyers Title Corp. and the muchmaligned New York Title Co. from the State Insurance Department, which now controls them. It announced it would run them as one, in the event of the sale's approval by the Court. Home Title's President Henry Joralemon Davenport (Arch. Forum, Sept., 1935, p. 221), who was largely responsible for the proposal, was mentioned as probable head of the new company.

The new company would engage solely in a title guarantee business, would make no mortgages. Lumped together, the three companies loom as great in size as New York's mammoth and still-operative Title Guarantee & Trust Co., which escaped the ill effects of the guaranteed mortgage crash, having conducted its mortgage business through a subsidiary. Said Superintendent of Insurance Louis H. Pink: "It



Brooklyn Daily Eagle

Home Title's Davenport

would be good for the Title Guarantee & Trust Co. to have some keen competition."

Queried as to the possibility of State obstruction, Aetna Life Vice-President S. F. Westbrook declared: "In spite of the suggestions for new legislation, we believe that there is a definite place in the community for a well-run title insurance company, and that even should some State-controlled medium become an actuality, there will always remain the necessity for title plants such as have been built up."

The Mortgage Commission's suggested legislation was accompanied by a proposal that the State might well employ the old title companies to search titles under the new set-up.

"THE WORLD'S LARGEST OFFICE BUILDING"

illustrates the virtue of merchandising, and dismays nobody with its 1936 loss. An introduction to "buyer traffic."

Chicago's Merchandise Mart claims for itself the grandiloquent title of "World's Largest Office Building," and it has been freely predicted that this very size would one day undo the Mart as a financial venture. To pleasure the doleful last month the Mart released its annual statement. It recorded a deficit before interest of \$66,-000 for fiscal 1936-its fifth year of operation. Interesting was the fact that the preceding year had shown a profit of \$181,000 before interest. Equally interesting was the fact that interest on Mart stock has been in arrears since 1932. But more interesting than either of these facts and informing both with new meaning was the history of the World's Largest Office Building.

Most of America's very big buildings, like most of the Atlantic's very big liners, owe their size rather to fits of boomtime exuberance than to an existing and clearly understood need. The 4,000,000 sq. ft. of Chicago's Merchandise Mart, however, are no larger than the building's underlying idea. Ten years ago Chicago had a wholesale district no different from the sprawling jungle around Manhattan's middle Fifth Avenue, Boston's "downtown," St. Louis' rackety riverfront. For many months each year, it slumbered. Sporadically, it was crowded with buyers, each with 25, 50, 75 stops on his list, his time hopefully budgeted to get all of them in. A considerable part of the wholesale dollar went into road selling to gather up the loose ends. Today, with Chicago a bigger wholesaler than ever, its old wholesale district is smaller, less feverish. It is beginning to give away to one building that attacked the job of wholesaling systematically and simply. That one building had to be big.

The Merchandise Mart was built not by a realty corporation but by the crack merchants of Marshall Field & Co., who inherited from the late Marshall Field not only a local habitation and a name but a bold merchandising idea.

From the days when he worked as a cash boy in Levi Leiter's dry goods store in Chicago, alert Marshall Field saw State Street grow into one of the richest concentration of department stores in the U.S. With that concentration came a dramatic increase in real estate values that enriched not only Marshall Field but Potter Palmer and many another forehanded Chicagoan.

To describe what he saw, Marshall Field coined a phrase, "buyer traffic." One day he called into his office his young confidential clerk, future Board Chairman James Simpson and said in effect: "Mandel Bros. want a long term lease on my property down the street. If I refuse they may have to move off State Street and start up somewhere else. That would leave us pretty much to ourselves. What would you do?" James Simpson advised his employer not to lease the property. Shocked, Marshall Field drilled his clerk in the principle of buyer traffic: an alert merchant should



Wide World

Board Chairman James O. McKinsey

contrive to have his competitors close about him, trust to good storekeeping to get his share of the business.

How well James Simpson had learned his lesson did not appear until a quarter of a century later, when he was ruling the Field empire that included not only one of the most famous retail stores in the U.S., but thriving wholesale and manufacturing divisions as well. Early in the twenties, methodical Merchant Simpson sat down with Ernest Graham, business partner of Architects Graham, Anderson, Probst & White. Calmly he said that Chicago should plan for its future as a topflight wholesale center, that Marshall Field as one of Chicago's great wholesalers should put up a building big enough to serve as an efficient wholesale district under one roof. In 1925 Graham, Anderson, Probst & White produced in their offices the preliminary drawings for the Merchandise Mart.

Since he planned to spend \$30,000,000, James Simpson did his job thoroughly. No dictator, he could not raze the old wholesale district, had instead to find a cheap site at the focal point of Midwest transportation. The best site, on the north bank of the Chicago River, was occupied by the tracks of the Chicago Northwestern Railroad. The tracks could not be abandoned or moved. Marshall Field bought from the railroad air rights to 200,000 sq. ft. over the tracks, 50,000 sq. ft. of ground for the Mart's own service track and platform, 8,000 sq. ft. for a power plant, 10,-000 sq. ft. for dock frontage along the river. Also bought outright by shrewd Mr. Simpson were the 458 lots on which the building's caissons rest.

Meanwhile, Mr. Simpson talked up the Mart to many a U.S. wholesaler and manufacturer, piled up fat contracts for space. He was helped by the prestige of Marshall Field & Co. Wholesale, tacitly by the immense buying power of Marshall Field & Co. Retail. He was helped more by the intrinsic compulsion of the idea which, however it might frighten an occasional conservative, had been distilled from modern merchandising experience. Retailers had concentrated to survive. Wholesalers existed only to smooth the path between manufacturer and seller, depended for their life in a day of big retailing units on an intangible margin of convenience. His final argument: Marshall Field & Co. would be the Mart's first tenant.

The Building. Form, in the Merchandise Mart, had little alternative to following function, for the function was both special and clear. The building had to provide display space, in flexible units, for several hundred wholesalers selling products that ranged in bulk from furniture to jewelry. The glass front store was to be the architectural unit, with corridors as streets. In a precise sense, the building was to be a city in itself, with a city's characteristic concentration and flexibility.

Two kinds of traffic needed accommodation. Thus in the Mart the passenger elevators are banked along the main passenger corridor, straight through the center of the building, are paralleled by a service corridor and service elevators. The passenger shafts end in a first floor lobby, the freight shafts in the underground region which houses river docks, the Mart's railway spur, and a 700 ft. trucking concourse. This simple division of traffic can proceed through the length of the Mart, since shops on the inner corridors are placed as well for their purpose as those on the perimeter and there is no problem with inside space.

Within the limits set by these two arteries of traffic, the Mart is completely flexible above the main floor. A tenant who decides that he can afford to display five or ten rooms of furniture instead of two can shape his space accordingly. For partitions below 7 ft. in height, Operating Superintendent O. C. Metzger uses Sheetrock. Full partitions are set up in fire tile or in Sheetrock with metal posts. Fire tile costs about \$3 a running foot, is destroyed



Chicago Architectural Photographing Co.

"World's Largest" - Chicago's Merchandise Mart

when the partition is removed. That the Mart, to meet fire ordinance, is divided vertically into seven buildings makes a few adjustments impossible, but most requirements can be met by the use of fire doors. Every year the operating department dismantles, moves, or builds about 200 temporary partitions.

The shell of the Mart is clean and impressive. Justly proud are Graham, Anderson, Probst & White of the coordination of its hexagonal corners which produce an effect of rooted permanence. While drafting was in progress, NBC leased space for its Chicago broadcasting studios, permitting the architects to center the hexagonal motive on a new tower above the main entrance. Without and within, the Mart, conceived and built in the era of the movie cathedral, meets its architectural problems unpretentiously.

Management. The Merchandise Mart has always boasted an aggressive and ingenious management. Currently, the Man-Behind-the-Mart is Ted Reed, omnipresent general manager. Manager Reed was in the real estate business in Manhattan when he met the assistant treasurer of Marshall Field & Co. in 1928, Asked to join the sales force for Mart space he set foot in Chicago that year for the first time and by 1932 had worked himself up to the job of assistant to General Manager Hughston McBain. When the latter resigned Reed was given the job. Only 32 years old today, he is extremely energetic, knows most of the Mart's 1,700 odd inhabitants by their first names, spends days and nights keeping his 600 tenants happy. Wholesalers are happiest when they see buyers, and for buyers Mr. Reed runs a continual three ring show that attracts them from all over

Staples of the show are the seven na-

tional markets, the "buyer's season" of the wholesale district translated into terms of a single building. Instead of walking out from Loop garages, the buyers may park free on North Bank Drive, where they are identified by special Mart stickers. For luncheon they choose between three main floor restaurants. Checks are cashed by the Mart Bank. Buyers accustomed to roasting pavements and airless display rooms breathe only washed air, pumped into the Mart at the rate of 3,500,000 cu. ft. a minute. In the evening, they are Mart guests at parties in the auditorium. To help Mart tenants sell their goods quickly, amiable Operating Superintendent Metzger will hire torch singers, rig up at short notice a platform that may resemble Palm Beach or a Mississippi River Show Boat.

The Business. The Merchandise Mart cost about \$32,000,000, of which \$18,000,000

MART MISCELLANY

TRAFFIC: For the twelve days of the home furnishings show, 759,500 used the elevators in 1936, 684,000 in 1935, 516,000 in 1934.

BUYERS: 2,746 registered in 1933, 4,059 in 1934, 5,900 in 1935, 11,000 in 1936.

PAYROLL: 189 permanent employes in the operating department, as follows: 19 night janitors, 10 night maids, 21 day janitors, 3 day maids, 8 furniture uncraters (the only packing serviced by the Mart), 9 day watchmen, 15 night watchmen, 41 elevator men, 5 engineers, 3 firemen, 1 incinerator operator, 4 plumbers, 3 steamfitters, 10 electricians, 5 carpenters, 2 laborers. To operate the mechanical ventilation system, 9 men are hired. One terrazzo expert cares for the chips in 226,000 sq. ft. of corridors. From 25 to 150 extra men work on contract doing tenant revisions.



"Naturally we used Flexwood again"

Perry Coke Smith, designer, Voorhees, Gmelin & Walker, architects, New York, says: "Our problem four years ago was to get a rich wood interior in an existing area of irregular dimensions. Because of the number of alcoves and recesses the conventional wood treatment was impractical.

"Lacewood Flexwood, applied horizontally, provided a warm wood treatment without labored effect, the cost was moderate and it met the requirement of speed.

"This year, when The Emigrant Industrial Savings Bank enlarged its quarters Flexwood was used for the addition and the original Flexwood walls cleaned and refinished to match the new. The entire interior was redecorated, so it is obvious that Flexwood would not have been used if the initial installation had not given perfect satisfaction."

Flexwood is genuine wood veneer mounted on cloth. Flexwood, because it is wood, takes any wood finish. For complete data on this *modern* way of wood panelling, please address United States Plywood Co., Inc., 103 Park Ave., New York.



came from the Metropolitan Life Insurance Co., the rest from Marshall Field. In Chicago it is widely believed that the Mart "loses money." In Chicago it is hinted that reductions in the Metropolitan note came from the \$14,000,000 Marshall Field raised in 1930 by selling 1,400,000 shares of stock at a stated value of \$10 a share. Since the stock dived shortly after its issue from \$50 to \$3, now sells at \$19, local critics of Marshall Field have lately



Wide World

General Manager Ted Reed

given the Merchandise Mart many long breaths of scandal.

Anyone, of course, who participated in a Marshall Field stock issue has only himself to blame if he was unaware of Marshall Field's real estate record. But Marshall Field has deferred to criticism to this extent—they do not discuss profits or deficits, compute with one hand the operating profits of the Merchandise Mart while with the other they point to the fixed charges that make those profits unreal.

If you were a stockholder in Marshall Field, you might have somewhat this picture of the Merchandise Mart:

ASSETS

Air rights and land \$ 2,907,461.85 Building and equipment \$ 25,589,390.43

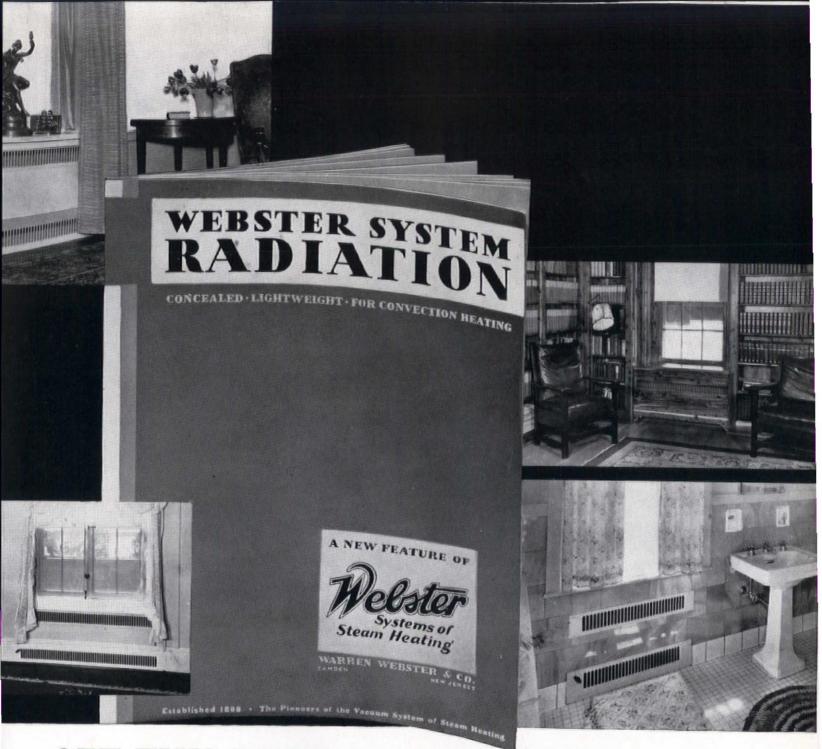
REVENUES

(exclusive of rental from Marshall Field & Co.) 1,260,000 sq. ft. @

COST OF OPERATIONS

850,000.00 800,000.00

That leaves a surplus of \$270,000. To pay the Mart's interest and depreciation charges, which should conservatively total \$2,500,000, Marshall Field may choose to pay \$2 instead of \$1.50 for each of the



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balanced heating service . . . no cold corner rooms . . . See how Webster Concealed Radiation harmonizes with the decorative schemes in a group of America's fine homes. Webster Systems of Steam Heating for residences and larger buildings provide dependability fully proven by performance in thousands of seasoned installations. This fully illustrated book, complete with design and installation data and architectural specification, is yours for the asking. No obligation, naturally.

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features have contributed to remarkable records for low fuel consumption.

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1,200,000 sq. ft. they occupy in the Mart, or they may pay a direct subsidy.

Thus you might conclude that if the Mart had been a speculative venture it would have failed. But the fact that the Mart did not, until fiscal year 1936, attempt so much as an operating budget of its own indicated that Marshall Field does not consider it a speculative venture.

Last month Field's released their annual report and revealed to the curious an anomaly. In fiscal 1935 the Mart had shown a profit before interest of \$181,328. But in fiscal 1936 it showed a loss of \$66,459. Meanwhile occupancy in the Mart had followed this hopeful curve:

1933				19			55	69.4%
1934			-					74.2%
1935								81.2%

The reason for the apparent contradiction between rising occupancy and the appearance of a deficit was this: Marshall Field have judged the current times to be healthy, and so taken the opportunity to squeeze some water out of the budget by lowering their rental contribution to the Mart, by upping the annual Mart depreciation rate from an approximate \$500,000 to an approximate \$750,000. Thus while stockholders have received no dividends from the Mart since March 31, 1932, they may still well take heart in the currently red budget.

Finally, a stockholder curious about the position of the Merchandise Mart in the Field empire might reflect that Field's occupies 40 per cent of the Mart's rentable space, that it deserted an \$8,000,000 building in Chicago's wholesale district in favor of the Mart, that therefore the Mart might not unfairly be written off as a new home for Marshall Field & Co. Wholesale.

Even an acute stockholder's guess, however, would fail to satisfy an accountant, and since 1935 Marshall Field's Board Chairman has been a C.P.A. James O. McKinsey ran a prosperous consulting agency in Chicago until he moved over to Marshall Field last year. Field's board of directors hired him to make a survey of the Field properties while James Simpson enjoyed a busman's holiday as receiver for Samuel Insull's Middle West. When McKinsey brought in his survey, he had so much to suggest that Field directors decided it would save time to make him Board Chairman.

First decision made by 46-year-old Board Chairman McKinsey was a revolutionary one. Wholesalers Marshall Field left the wholesale business proper, announced that in future they would sell only their own manufacture. Whether this move would cut down Field business, and injure the prosperity of the Merchandise Mart's biggest tenant, depended on the judgment of Accountant McKinsey.

So far as the Mart itself was concerned, James McKinsey knew that it had not written its history in the five years of Depression since 1930. After the first year,

"In fact it is highly satisfactory"

"We have been in our offices for almost a year and there is no apparent wear in the Sloane-Blabon Linoleum. In fact, it is highly satisfactory."

The Linen Thread Co., Inc.



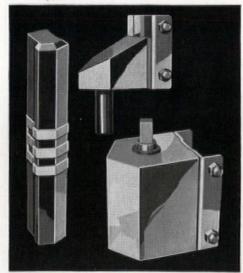
Illustrated is the main office of the Linen Thread Company situated in the Lincoln Building, New York . . . one of the many recent Sloane-Blabon installations. The specifications for this job were — durability, resiliency, attractive colors. Sloane-Blabon met them all. The net result is an exceptionally good-looking floor . . . a floor that can take the hard wear of

a busy office. Linoleum is the modern way to add color and relieve both foot and eye tension.

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You will want this distinctive and better hardware for toilet or dressing compartments or similar uses. A great advance in construction as well as attractiveness. Distinctive, gravity type hinges, adjustable to stop at any angle. Send today for illustrated specification folder covering this modernly styled line.



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"A Mills Metal Partition for Every Purpose"
OFFICES • FACTORIES • TOILETS
DRESSING ROOMS

when panic among wholesalers canceled many a space contract, cut down most of the others, the Mart had been gaining ground. From a 50 per cent occupancy it had fought its way up to 82 per cent. In the last sixteen months, bouncing, dapper General Manager Ted J. Reed signed 176 new leases. In such key lines as housewares and furniture, the Mart is approaching its maximum, cannot be far from the happy day when it is able to boost its \$1.50 average rate.

The Merchandise Mart, Chicago-joked in 1930 and 1931, is here to stay. How profitably it will stay is in the hands of U.S. wholesalers, who alone know how much it is worth to them to rent display space. That the Mart is no white elephant most will admit; that it will ever occupy the place James Simpson planned for it not even Marshall Field & Co. knows.

PRIVATEMARKETABILITY

features a plan to issue trust certificates against FHA loans.

Long a contradictory aspect of the Federal Housing Administration's program has been the fact that while it seeks to reform the U. S. mortgage market, its benefits are denied the largest class of mortgage investors—private individuals. Prohibiting the extension of insurance to this class is the average individual's lack of equipment for properly collecting payments and otherwise servicing the mortgage as FHA prescribes.

Recognizing this, the authors of the National Housing Act wrote into it provisions for National Mortgage Associations whose thoroughly marketable debentures, based on FHA mortgages, were to have sopped the mortgage market dry of its ill-offered individual mortgage money. Last year, discouraged at the non-appearance of National Mortgage Associations, FHA tried another tack by enabling individuals to invest in FHA mortgages through approved trust companies. Under this scheme, an individual may buy an FHA mortgage so long as it is held on deposit and serviced by such a company.

To this workable trust deposit scheme, a unique plan of private origin last month proposed to add the broadening feature of marketability. Set up to function as a sales outlet for deposit indentures issued against FHA mortgages by Manhattan's City Bank Farmers Trust Co. was a new organization called the First Home Plan Income Corp. Its unusual ware was an investment with a guarantee virtually the same as that behind a U. S. bond, but with a yield almost twice as great.

First Home Plan Certificates of Deposit will be issued against specific mortgages in denominations from \$3,000 to \$6,000, will bear a return made up in part by amortization, in part by 4½ per cent interest on the unpaid principal of the underlying mortgage. Priced at a premium and transferable, they will be offered through regular dealers, who last month in droves of 50 a day were responding to the company's New York Times announcement. Footing this able presentation of its product, termed "The New Investment," was the postulate that "The old-time mortgage,



Underscood

First Home Plan's Henry

mortgage participation, and mortgage debenture have been superseded."

Organized to match the Home Owners Loan Corp. and the Federal Land Banks, whose bonds its certificates of deposits will be like, and possibly to substitute for National Mortgage Associations, First Home Plan Income Corp. is the ambitious brainchild of its amiable young president, Fred A. Henry, a partner in the municipal bond house of Carr, Henry & Doyle. Behind President Henry sits an eccentric young capitalist, famed Michael J. Devlet, who has come out of retirement at 35 to chairman the company. In 1934 rich Mike Devlet quit the successful bond firm of Gertler, Devlet & Co. to set up a dozen of his youthful proteges, including Henry, in separate businesses under his "paternal guardianship."

Seven years ago City Bank Farmers Trust Co., oldest in the U.S., became a subsidiary of National City Bank. Building men recalled last month that National City was among the first to take advantage of FHA's modernization loans, hoped it saw as good a bet in First Home Plan. Meantime, installed in a Wall Street office whose lobby is a rhapsody of stoops and trellises suggesting The Home, First Home Plan's Henry remained nervily sure that his Plan was the answer to all that they or he

could ask.

For Home-Builders: \$24,000,000

INVESTORS SYNDICATE believes there are graphic indications of a substantial up-turn in home-building.

We also believe that we can be of material help in adding momentum to this revival by putting the means of building a home within the reach of a greater number of people.

And for this purpose, we plan to advance, through our mortgage loan division, \$24,000,000 to home-builders during 1936.

We prefer to make these loans on new homes, and particularly those that will be owner-occupied. To borrowers in these categories Investors Syndicate offers a plan that is particularly advantageous because it can be fitted to each borrower's specific needs.

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Architects and builders are invited to extend this information to prospective clients. Offices and loan correspondents are located in the cities indicated in the list at the right. In each office, there is a competent staff, trained in property appraisal and mortgage arrangements.

Any member of these staffs will gladly give you the specific information you may want. Investors Syndicate is an approved mortgagee under Title 2 of the Federal Housing Act.

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Fletcher Trust Building Kansas City, Missouri.......Mortgage Loan Department Investors Syndicate 408 Commerce Trust Building Louisville, Kentucky Louisville Title Insurance & Trust Comp 223 South 5th Street Los Angeles, California Syndicate Mortgage Company 404 Associated Realty Bldg. William H. Gold Company 1008-12 Security Building Minneapolis & St. Paul, Minn. . Mortgage Loan Department Investors Syndicate Roanoke Building, Minneapolis New York, N. Y. Investors Syndicate Title & Guaranty Company 535 Fifth Avenue Oakland, California Syndicate Mortgage Company 702 Insurance Building Oklahoma City, Oklahoma Investors Mortgage Company 211 Northwest 2nd Street Philadelphia, Pa. William Reinhardt Third & Mifflin Streets St. Louis, Missouri......J. R. Van Raalte 394-96 Arcard Building Salt Lake City, Utah.........Capson-Bowman, Inc. 100 Atlas Building Tulsa, Oklahoma Investors Mortgage Company 216 West Fourth Street

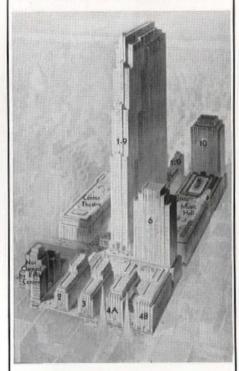
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System, divided into four heating zones, was installed.

With each successive building constructed, Differential Heating has been specified and installed except in the two theatre buildings, so that now the eight buildings listed below are enjoying dynamically balanced temperature regulation through the circulation of steam under variable sub-atmospheric pressures, variable low temperatures and variable volumes.

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BUILDING 2......French Bidg. 6 floors; 1,383,000 cu. ft. 11,300 sq. ft. radiation 284 radiators; 4 zones

BUILDING 3......British Bldg. 6 floors; 1,383,000 cu. ft. 11,300 sq. ft. radiation 284 radiators; 4 zones

BUILDINGS 4A, 4B and 6 International Buildings 38 floors; 12,983,000 cu. ft. 89,200 sq. ft. radiation 2,546 radiators; 8 zones

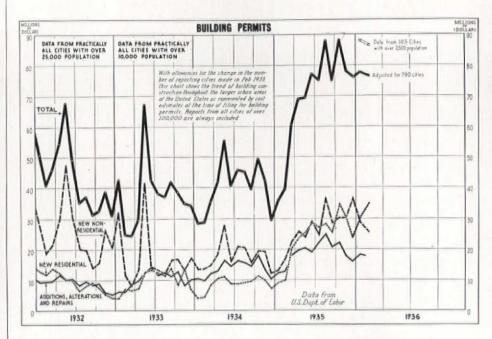
BUILDING 10......R.K.O. Bldg, 31 floors; 5,369,000 cu. ft. 43,000 sq. ft. radiation 1,306 radiators; 4 zones

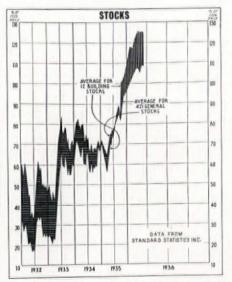
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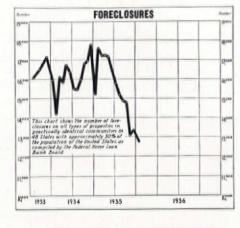
Over eighty branch and local sales offices in the United States, Canada and the United Kingdom bring Dunham Heating Service as close to you as your telephone. Consult your telephone directory for the address of our office in your city.

A NEW HOME PERMIT RECORD

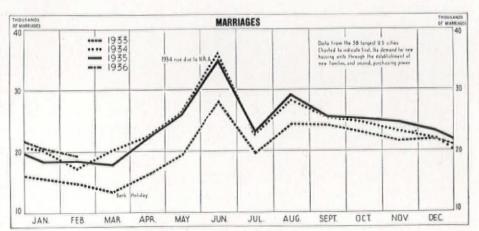
for post-depression years keeps building at 93 per cent of 1935. Marriages in four-year rise, foreclosures off, stocks a-soar.







(For Building Costs and Rents, see p. 363)





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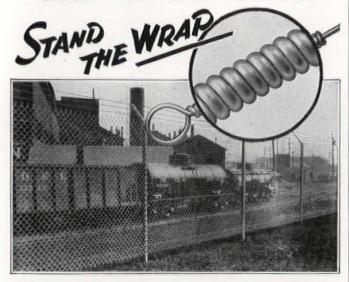
on many projects - whether you are planning a new building or modernizing an old one. Engineered by Bell Telephone Laboratories, it lives up to Western omitted. Electric's high standards of quality. For full details: Graybar Electric, Graybar Building, New York.



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FORUM OF EVENTS

(Continued from page 25)

1886. To illustrate the point, some 1886 renderings, looking like prehistoric Currier & Ives prints, were exhumed and set up beside the smartly finished 1935 designs; were irreverently commented upon by sightseers. The rest of the pieces were sufficiently devitalizing to allow even the lay observer honestly to conclude that 1935, in architecture, was singularly unproductive; that the League's golden jubilee was, as a whole, rather drab.

Such a blanket criticism does not, of course, take away from the genuine excellence of certain individual pieces. The crafts room contained enough single, inspired objects, such as Karl Schmieg's expanding mahogany table, Waylande Gregory's amusing John Heldish polo service and Kenneth Lynch's Gothic aluminum chess set, to reward the visitor for his academic trudging through the main rooms.

An interesting section was the WPA housing projects display. Plans, drawings, photographs and models of Federal, State and City housing developments, from Brooklyn, Harlem, Cleveland and Miami, were laid out in a rather confused state, but the student in search of nectar could find it in the New York Park Department's magnificent Riverside Drive project.

Of especial interest, because of its timeliness, was the exhibit of drawings of the 1937 International Exposition of Paris. Shown for the first time in this country, they show the buildings already under construction: the new Trocadero, the Pavillion du Cinema et de la Presse, the Musee d'Art Moderne and a plan of the complete exposition.

Similarly, the model of the Ford Building at the San Diego Fair (Arch. Forum, Aug., 1935) shows a very clever



Courtesy, Architectural League

TABLE BY SCHMIEG, HUNGATE, KOTZIAN Gold Medal Award in Industrial Art

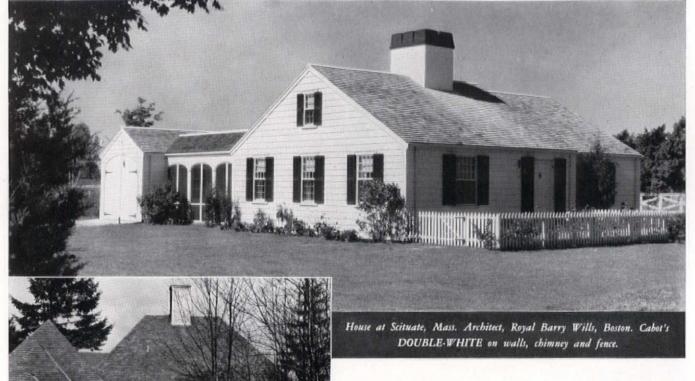
solution of good Exposition architecture in that, wherever the visitor paused to rest, he had a new V-8 looking at him.

Regarding the New York 1939 World's Fair, the only item which gave any hint of the proposed architectural trend was Peter Bittermann, Jr.'s model of a cosmosarium. Differing from a planetarium, that gives the earth's view of the planets, a cosmosarium gives the planets' view of the earth.

Cooperating with the Architectural League for the first time in their history, was the American Institute of Decorators. Besides a large group of photographs and water colors of interiors, the Institute showed two rooms: one decorated in the 1886 manner, the other in the 1936 style. Startlingly unmodern, the 1936 room was easily the less personable.

The following awards were announced:
Gold Medal in Decorative Painting: James Michael Newell
of N. Y.

(Continued on page 56)



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House at Portland, Oregon. Architect, Harold Doty. Cabot's

House at Purchase, N.Y. Architect, Lucius S. Beardsley. Cabot's Shingle Stains on roof, DOUBLE-WHITE on walls.

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Everyone's hand reaches out to Patrician. For here is the new design motif in hardware, a skilful blend of metal and plastic that creates two-tone effects of unusual charm. The jewel-like lustre of the plastic knob body will not tarnish, craze or fade, and is not affected by perspiration. Stains are easily removed.

Standard in black or ivory, with delicate pastel tones available as color accents in boudoir or bath, and mahogany or Chinese red for game-room, lounge . . .

Patrician embraces a complete line of sectional and pendant trim—quality you can depend upon. For further particulars please see Sweet's Architectural Catalogs; or a representative will call.



FORUM OF EVENTS

(Continued from page 54)

Gold Medal in Industrial Art: Karl Schmieg of N. Y.
Silver Medal in Domestic Architecture: James W. O'Connor of N. Y.

Silver Medal in Domestic Architecture: Morris B. Sanders of N. Y. (City House, Arch. Forum, Mar., 1936).

Honorable Mention in Domestic Architecture: Roland E. Coate of Los Angeles.

The Henry O. Avery Prize for Sculpture: Waylande Gregory.
The Birch Burdette Long Memorial Prize for Rendering:
Elizabeth Hoopes.

Honorable Mention in Sculpture: Gaetano Cecere of N. Y. Honorable Mention in Sculpture to Frank Eliscu of N. Y. To Professor Charles R. Richards of N. Y., the Michael

Friedsam Gold Medal for distinguished service.

Significantly, there were no gold medal awards in either architecture or sculpture.

TOM TOM

Last month, in an upper East Side studio, was installed amid much hammering and grunting, the largest decorative, vitreous enamel ever baked. The work of famed young Sculptor Russell Barnett Aitken, consistent prize-winner wherever pottery is shown, the ceramic mural adds even another feather to his already prolific Ojibway (by adoption) headdress. With many unrelated talents (he skis, shoots,



CHEF AITKEN'S PIECE DE RESISTANCE

polos, kodaks, writes, duels, kayaks, flies), he delights in venturing into new, unexplored fields; usually, as in this case, returns smiling.

A pioneer in the vitally new field of decorative enamel fused on metal, Ceramist Aitken accepted the commission for the Warrior Screen only on condition that all failures would be on him. Limited by the size of the furnace (the largest in the U. S.), he was forced to bake his esthetic biscuit in pieces, assemble them when cooked. Finally completed and welded together, the screen weighed 400 pounds, measured 9 ft. high by 12 wide. It will outlive posterity.

Different from the terra cotta process, steel-backed enamel is made in already glowing furnaces. A carefully prepared chart of color fusion points—made only after years of research—determines the order in which successive tones are fed to the flames, the schedule working from hot (1800°) to cold (1400°). The colors are made by grinding pieces of imported glass to a powder. Dissolved in a gum arabic solution, they can be brushed, stenciled or sprayed on. Colors with exact fusion points can be fired simultaneously, but usually one color at a time is trouble enough. The average

(Continued on page 58)



CARPET COUNSEL goes to Sea with Gibbs & Cox

Ship Architects



Bigelow carpeted Library of the Santa Rosa . Gibbs & Cox, Ship Architects . Elsie Cobb Wilson, Inc., Interior Decorators



All four Grace Line California ships—the Santa Rosa, Santa Paula, Santa Lucia and Santa Elena—were designed by Gibbs &

Cox and carpeted by Bigelow.

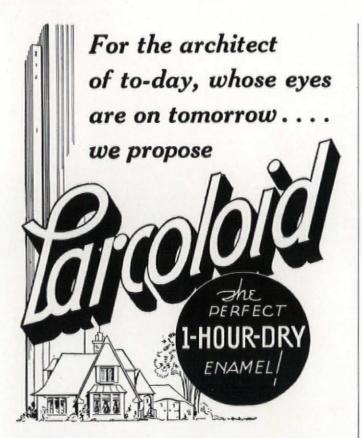
"Carpet was carefully selected for attractive appearance as well as to withstand the changing weather conditions met with at sea and the hard wear to which it is subjected", say Gibbs & Cox.

"Bigelow carpet has proven most satisfactory both in appearance and wearing quality since the vessels were put in operation in 1932", says The Grace Line.

Once more, our service of Carpet Counsel—long experienced on land and sea—helped to assure lasting satisfaction. May we have the pleasure of working with you on *your* next carpet problem? Contract Department, Bigelow-Sanford Carpet Co., Inc., 140 Madison Avenue, New York.

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LITTLE need to tell architects abreast of the times the part Larcoloid plays in the beauty of the finished job.

Consider, if you will, how in wealth and variety of color Larcoloid has given the architect a decorative range . . . a range that has literally revolutionized his work.

Every architect knows how drab has been the color range offered in acid- and alkali-resisting enamels. With the advent of Larcoloid a new day has dawned. Now Larcoloid with its thirty-seven colors, as well as black and white, offers a variety of incomparable effects in a perfect One-Hour Dry Enamel, an enamel alcohol-proof that positively resists all acids and alkalis.

What need then further to suggest to the architect of to-day, whose eyes are on tomorrow, that he inquire the facts concerning Larcoloid? Be it a cozy bungalow, a palatial mansion a modern industrial plant, or public auditorium, Larcoloid will afford you supreme satisfaction.

Learn the facts about Larcoloid. See the color card. Your inquiry will receive our prompt attention.

Larkin Co Inc. Buffalo, N.Y. Paint Division

Larkin Co Inc. , Buffalo, N. Y.

Please send me complete information (including color card) about LARCOLOID, the outstanding allpurpose Enamel.

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FORUM OF EVENTS

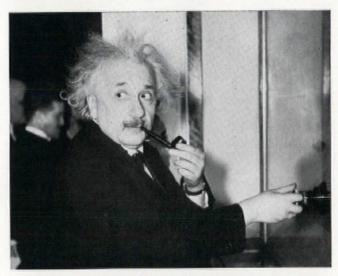
(Continued from page 56)

firing length is around three minutes, actual time being determined by close scrutiny of the screen in the furnace. The slightest over-firing reduces the screen to an irretrievable shambles. During firings, the screen is handled with asbestos gloves, is ready for the next coat twenty minutes after the preceding firing. Strangely enough, surface breaks and blisters have to be fabricated by inserting little jewel-like pieces of glass; results in a pleasant, uneven, bubbly texture.

Convinced that he has discovered a great new field, Ceramist Aitken is already enthusiastically planning bigger ceramics. The "Warrior Screen," in which he has captured the ceaseless rhythm of the pounding tom toms, was fabricated in the special oven of the Barrows Porcelain Enamel plant in Cincinnati. To have it finished in time for his annual New York show, Ceramist Aitken worked harder than a Broadway play producer the night before opening, matched his panels with great difficulties, happily dispatched the screen to New York by special fast freight. Flying to New York himself, he was dismayed to find his huge enamel sitting in a snow bank outside of Albany, could not rescue it until the day after opening.

THE PEACEFUL ARTS

In 1924, Henry R. Towne, President of Yale & Towne Manufacturing Co., died; left over \$2,000,000 as an initial deposit on what, in his will, he hoped would "initiate a public move-



SCIENTIST LIGHTS A CANDLE

ment for the creation in this (New York) city of a group of buildings designed to constitute a Museum of the Peaceful Arts... and may be the nucleus of a fund... to which public-spirited citizens will be inspired to contribute so long as the industrial arts shall continue to flourish in this great country." Last month, the newest in the family of museums, The New York Museum of Science and Industry, moved from the Daily News Building to its new permanent home in Rockefeller Center; was officially opened in an elaborate evening ceremony with Dr. Albert Einstein and other distinguished guests in attendance, when candle light was relayed to New York from Michael Faraday's desk in London.

With a threefold underlying purpose: to show 1) the fundamental principle which is carried through each successive stage of scientific development, 2) that final embodiment is only transitory, and 3) that every department of science is but a portrayal of common nature, the Museum's

(Continued on page 60)

THE STRIKING NEW

ESTATE "BLACK BEAUTY"

PUTS THE SPARKLE OF SMARTNESS—PLUS IMPORTANT NEW LABOR-SAVING FEATURES—INTO 1936 KITCHENS



TO HELP you answer today's demand for supersmartness plus ultra-efficiency in the kitchen, Estate designers created this striking new gas range. "Black Beauty!" And, looking at it, you can see why so many architects are "blueprinting" it into so many kitchens.

From the architect's point of view—and from his client's—"Black Beauty" is a glorious gas range. Its classic design—its gleaming black porcelain enamel finish—with genuine Monel Metal top covers and top

Super-smart new Estate Gas Ranges also available in Ivory and in White. Compact new models for small kitchens—widths from 351/4 to 44 inches.

centerpiece—make it fit in perfectly with today's decorative schemes. (If a touch of bright color is wanted, the handles may be had in tomato red, jade green or powder blue.)

From a functional standpoint, this new Estate is just as sensational as it is in appearance. Heavily insulated Estate Fresh Air Oven, Estate Leveracks, TimeEstate Time Control, ThermEstate Heat Control, Grid-All, Automatic Lighting of top burners and oven burner; these are just a few of the features which will interest you. Write today for copy of complete new catalogue No. 107.

THE ESTATE STOVE COMPANY · HAMILTON, OHIO

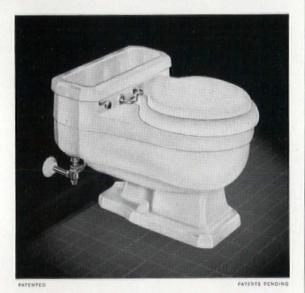


Big Homes



Little Homes

THE ANSWER IS ALWAYS A T/N



Whether plans are for the elaborate home, or the smaller one, specify T/N, the first and finest one-piece water closet design made of twice-fired vitreous china. Modern and beautiful in design and available in an amazing array of colors, the T/N conforms to all modern trends in bathroom fixture design. The T/N brings a new meaning to quiet operation and the non-over-flow feature eliminates possible damage to floors and ceilings. Atmospherically vented to prevent water supply contamination, and a special regulating stop permits volume regulation of water under all pressures. Designed for the most costly bathroom layouts, the T/N is priced so you can specify it in the most modest of your home plans.

T/N ONE-PIECE WATER CLOSET

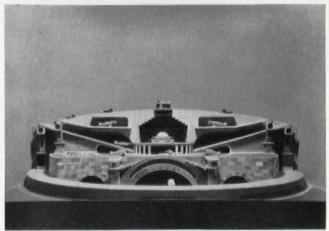
W. A.	CASE	& SON MANUFACTURING	COMPANY	Founded 1853
Dept.	E-46,	31 Main Street, Buffalo,	N.Y.	
Diane	ennel	ma complete descriptive	literature	helpful data and

Please send me complete descriptive literature, helpful data and interesting illustrations on the T/N One-Piece Water Closet, both for REMODELING and NEW HOMES.

FORUM OF EVENTS

(Continued from page 58)

acknowledged objective is to aid the non-scientific person to understand Industry's great obligation to Science. Under such group headings as Aviation, Photography, Housing, etc., the ordinary man is enabled to follow leisurely and easily the progress of such every-day commonplaces as the electric light or the telephone from its earliest beginning to its present day position; is allowed to speculate upon its future possibilities. To further illustrate the magical advances, conveniently located push-buttons and levers, when pushed or pulled, cause lamps to flicker, set gears to work,



J. D. Beiners

STRANGE SPONSORSHIP

start wheels in motion, reduce Science to elementary, understandable terms.

Great use has been made of miniature models to show the evolution of marine navigation (trireme to Normandie), housing (neolithic to contemporary; Arch. Forum, July, 1934), power stations, airports, road construction and trains (a replica of Robert Stephenson & Company's high-funneled, wooden-wheeled Rocket, built in 1829 to a miniature streamlined model). The most popular gadgets are the high-frequency radio direction beam compass, with which the visiting navigator plotted his course, and the self-recording telephones, with which visitors listen to their own telephone voices. Invariably, they ask the operators in attendance what to say.

Of vital importance, not to the U.S. perhaps, but certainly to the European, is the model of the Underground Airport, showing a proposed design for a fortified subterranean rail, highway and air terminal. Although no such airports have yet been built, they are being carefully considered by government officials.

FAIR FLASHES

Ever since Chicago proved that large quantities of cold cream and toilet water could be disguised as Balinese temples and sold at a nifty profit in even the worst of depressions, fairs have been sprouting up all over the world like Townsend clubs. To date, no less than six large expositions (with seventeen precincts yet to be heard from) have announced their intention of unfolding between now and 1939, when New York honors the long-awaited Fair to End Fairs. Despite their individual, plausible raisons d'etre, they will all have one bond in common: to ballyhoo the local products, peddle them with Terpsichorean bubbles. Over the international fair front last month came this news:

San Diego, California: Reopen for business.

Dallas, Texas: With about \$25,000,000 to celebrate the (Continued on page 62)



A simple question to which there is an obviously simple answer. Buying feed for the horse, would represent your greatest economy. The same holds true in buying the energy for mechanical horsepower for Air Conditioning. It costs more to start, and run, 6 small compressors, than it does 1 large one.

With York there is a correct horsepower size for every job
Call on ...

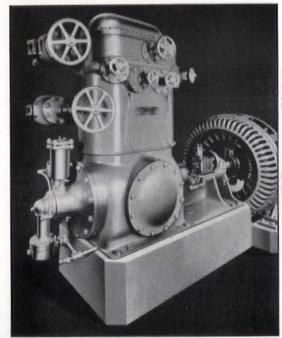
Headquarters for Mechanical Cooling

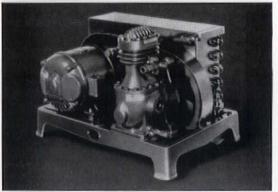
Your specifications might call for a ¼ or a 200 H. P. Condensing Unit. York can deliver either to you. York Condensing Units, in standard sizes, provide the cooling for many of the largest Air Conditioning Systems in the country. When you specify York Equipment you can do so with the knowledge that it offers the most economical unit for the job in hand. You don't have to compromise on sizes. You don't need a battery of small units. York has the machine, as standard equipment, that will fit. It is equipped to automatically vary capacity to meet changing air conditioning demands—consuming power only in proportion to these demands. And that's economy that every engineer will recognize.

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To architects, consulting engineers, heating contractors, York offers a wealth of trained engineering skill that is unmatched in the field of Mechanical Cooling. And York manufactures such a wide range and volume of Air Conditioning equipment that it can deliver engineered Air Conditioning products for any job, correctly designed and individually fitted . . . no matter what the size or type of building.

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DISTINGUISHED and lasting beauty, insulating value and outright economy are reasons why genuine Weatherbest Red Cedar Stained Shingles are being written into so many architects' new home specifications for sidewalls and roofs.

Carefully selected, Weatherbest Shingles get their soft, rich, enduring colors from specially processed stains, made with finely ground color pigments suspended in linseed, penetrating and preserving oils. Available in many harmonious colors.

When shingles grow old their original life and beauty can be renewed—or the external color scheme completely changed—at small cost with superior *Weatherbest* Stains.

For modernizing, Weatherbest Stained Shingles are pre-eminent. Their application right over existing sidewalls—whether wood, stucco or asphalt—will often completely transform a home's exterior, with little or no structural change.



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Name			
Address			

FORUM OF EVENTS

(Continued from page 60)

Centennial of the Lone Star's admission to the Union, the parade of an empire that flew six flags opens on June 6, closes November 29. Will reward visitors with vivid scenes of old Southwest. Largest building will be the Texas Hall of State. Costing over \$1,000,000, it will be a permanent monument to the sturdy pioneers who built an empire out of a wilderness in 1836.

Cleveland, Ohio: \$1,000,000 to honor the Middle West in a non-profit Centennial exposition, opening June 27 for 100 days. Main feature will be an international village to be known as the "Streets of the World." In itself, this project will occupy over seven and one-half acres and contain more than 100 structures. Richard Rychtarik is the designer.

Johannesburg, South Africa: Seeking to chisel in on a good American racket, Joburg announces the first Empirewide exhibit in South Africa. To open September 15, the provincial Wembley will exist until the World Cruisers arrive in January; will feature local turbulent history, honor Britain's colonial policy.

Paris, France: Little is known of the proposed 1937 International fair other than that Trocadero, hero of the 1878 fair, is down. Many civilized nations (including Italy and Germany) have already accepted space in the grounds. The U. S., lax as ever, has made no definite Congressional decision.

New York City: Although various realtors have expressed the 1939 fair a "Santa Claus in disguise" and a "doubler of civic pride," little has been done except in a vocal way. Conservative estimates all agree that the final cost will be in the neighborhood of \$45,000,000 however. The underlying theme will be 150 years of progress of the nation as a whole, not of New York City alone.

ALGER'S KITCHEN DRAMA (MACCALL'S)

KAY HARPER (Lois Wilson) and Bob, her husband (Lloyd Hughes), who haven't been seen since "The Covered Wagon" (Lois sat on the driver's seat) have been hiding all the time



THE FORGOTTEN KITCHEN

in the kitchen. They have grown old in each others' arms. Sneering at old age and rainy days (they belong to Townsend Clubs), they have given no thought to the future, less to the present. Eventually the Depression catches up with them. They spend far too much time in the kitchen,

(Continued on page 64)



Iron Fireman Manufacturing Company world's largest manufacturer of Automatic Coal Burners announces the

IRON FIREMAN GUALFLUH

a new type of burner which eliminates coal handling and which may be easily installed in old or new heating plants

The introduction of this advanced Iron Fireman automatic coal burner is of significance, not only to architects and home builders, but to all home owners who are interested in basement modernization and in securing from coal a fully automatic heating service.

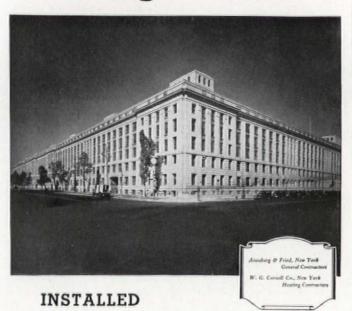
See advertisements in:

THE SATURDAY	Evi	ENI	NG	Po	ST	April 4	BETTER HOMES & GARDENS		May
Тіме		,				April 6	House Beautiful		May
FORTUNE					,	. May	House & Garden		May
AMERICAN HO	ME	,		,		. May	COUNTRY LIFE		May

IRON FIREMAN MANUFACTURING COMPANY, PORTLAND, OREGON; CLEVELAND, OHIO; TORONTO, CANADA

This Great Government Building

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AEROFIN FAN SYSTEM HEATING AND COOLING SURFACE

A EROFIN standardized light-weight heating surface meets exacting government specifications for efficiency, reliability and permanency.

For this reason it is the logical choice of architects, consulting engineers and contractors for all fine buildings. In fact, wherever dependable fan system heat surface is required, put Aerofin in your specifications.

Constant research keeps Aerofin always up-to-the-minute and out in front. It is surprising how Aerofin design anticipates the future. In Aerofin you will find everything you have wished for in forced fan heating systems. Let us prove it!

A complete line of equipment for heating and cooling is at your service. The home office in Newark or any of our branch offices will gladly send complete descriptive literature or render prompt personal and efficient technical co-operation. Simply write to the address below.



FORUM OF EVENTS

(Continued from page 62)

where, in true bride fashion, Kay serves Bob Shredded Wheat for breakfast, keeps her hands dainty with Rinso.

The kitchen is perhaps the dingiest room in the house. Built about the time Mrs. O'Leary's cow kicked over the lantern, no visible improvements have yet been made. Now



HAPPY LENDINGS

and then, this makes Kay sore. "With all the other wives slaving over electric washers I would have to marry you" seems to be her optimistic outlook. Not that she loves Bob any the less, but . . .

Then comes the FHA, disguised as Dawn. Love lapsing in this stirring drama of the kitchen because of a few burnt biscuits (she couldn't find the stove), Kay decides to take a chance and try for an FHA loan. It is the making of her. (Don't get us wrong. She really had an uncle in Washington.) Decides to put in a completely new kitchen outfit for Easter; recapture her husband with a new style of cooking.

Is he surprised when he comes home from a hard day at the movies? "What's happened to the love nest?" he asks, arching his eyebrow the cute way he used to when he was a matinée idol—back in the silent days. But no longer a silent man, he raves enthusiastically over the new equipment, dotes over each little gadget, proclaims Fate "just ducky."

Not being a selfish family, the Harpers drag in their friends to see the new set-up, croak contentedly under the envious eyes of the neighbors. Soon, running out of friends to whom they can show their new kitchen, they increase their cruising radius; become veddy veddy social. Serve caviar to all guests, keep the ice box (pardon, the electric refrigerator) filled.

The Harpers are soon the talk of the town. (No one else seems to be able to get an FHA loan.) They are invited everywhere. The party doesn't begin until the Harpers arrive; it ends when they leave to go for another look at their lovely kitchen. And Bob, his job back, makes astounding commissions. Becomes a financial Tarzan, yodels.

With such a relentless expose of the effect of an untidy kitchen upon love eternal, no June bride should pledge her vows without first seeing this gripping drama, "THE COURAGE OF KAY." Hurdling—as it does—whole gamuts of human emotion, it bares hitherto unknown facts of the kitchen's love life, lasciviously drips of tortured souls, their heart-rending battle against capital and the inevitable. No picture has ever before so daringly defied convention, revealed so

(Continued on page 66)

Fenestra's Complete Window for Summer and Winter Gives You— 1 A Steel 2 A Steel 3 An Inside 4 An Inside Casing 2 Casement 3 Screen 4 Storm Sash

- 1. Fenestra Steel Casings take the place of interior trim, mouldings, stool and apron. Delivered already attached to Fenestra Casements. Installed as complete units. No weights, no cord, no fitting or hanging of sash. Installation costs reduced.
- 2. Fenestra Steel Casements open or close easily—never warp or stick. Provide more daylight, better control of ventilation, fire protection. Safely washed on the outside from inside the room.
- 3. Fenestra Bronze-Mesh Screens attach in a jiffy to the casement on the inside. Screens are inconspicuous, and the swinging sash are opened, closed or locked without touching them. When removed for storage, screens need not be marked or numbered.
- **4.** Fenestra Inside Storm Sash replace the screens, in winter. They eliminate condensation and frost under all ordinary conditions; reduce heat loss and save fuel by providing a dead air space between the two glass surfaces.

ETROIT STEEL PRODUCTS CO., 2251 E. Grand Blvd., Detroit, Mich.	Fenestra Casements
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Fenest STEEL CASEMENTS	



Why RIC-WIL Type "F" Conduit Means Dependable Protection for Underground Steam

- Famous Ric-wil Dry-paC Waterproof Asbestos Insulation—for high efficiency. (Conductivity only .36 B. T. U. for low pressure.)
- Interlocking construction throughout—for stability.
- Famous Loc-liP side joint, continuous and visible.
- Best vitrified glazed tile—waterproof, everlasting.
- Approved, positive bell joint on conduit.
- Base drain foundation, substantial, non-settling —ample drainage.
- Practical pipe supports which snap in place quickly.
- Only three pieces to handle for each 2 ft. of system, only three joints—low installation cost.

The above points emphasize the fact that Ric-wiL Conduit will keep your underground steam lines tight, dry, and 90% or more efficient. Ric-wiL Standard Systems include optional types of insulation and can be furnished in either tile or cast iron to meet any practical requirements as to supporting strength. Ric-wiL also manufactures the self-contained, pre-fabricated Unit Steam Main, a complete unit system for underground steam transmission. Catalog describing all types of Ric-wiL Systems gladly furnished on request.

The RIC-WIL Co., Union Trust Bldg., Cleveland, Ohio New York San Francisco Chicago

Agents in principal cities



CONDUIT SYSTEMS FOR UNDERGROUND STEAM PIPES

FORUM OF EVENTS

(Continued from page 64)

unsparingly, in such subtle, successive stages, the pitfalls of the social outcast, the dangers of class revolution, the renaissance of internal combustion.

The picture of the Century, "THE COURAGE OF KAY," scorns comparison, dares imitation. Supporting Miss Wilson and Mr. Hughes in the picture are Muriel Evans, Carl Stockdale, Arthur Hoyt and Claire McDowell, all apparently still alive and healthy after all these years. Adding zest, drama and pathos to the picture, each gives the performance of his (or her) career. Their future work—if any—will be watched closely. But if judgment rests upon their work in this colossal postscript, they went far beyond the appellation "stardom." They attained martyrdom.

Good shot: final fadeout.

PERSONALS

George E. Yundt, architect, announces the opening of offices for the practice of architecture at 16 South Sixth St., Allentown, Pa. A registered engineer, his former address: 16 East Rock Road, Allentown.

Beating its old record by eleven years, last January, Detroit awarded 1st Prize in the Levi L. Barbour fountain competition to Marshall Fredericks, instructor of drawing and modeling at the Cranbrook School. Second prize to Mrs. B. Hjalmar Larsson; 3d to Sten W. J. Jacobsson (Arch. Forum, Dec., 1935). Previously, Detroit took 21 years to make up its mind over fountains.

Dr. J. Harold Williams, Dean of the 1936 Summer Session of the University of California in Los Angeles, announces the appointment of Architect Richard J. Neutra to the summer staff. A graduate of the University of Vienna and a leading exponent of modern architecture, Architect Neutra will lecture on "The Art of Architecture."

President Nicholas Murray Butler announces the appointment of Professor Leopold Arnaud as acting dean of the School of Architecture of Columbia University.

Roger Allen, architect, announces the removal of his office to 1228 Grand Rapids National Bank Building, Grand Rapids, Mich. He has succeeded the firm of Frank P. Allen & Son.

M. J. Mendelssohn, architect, announces the opening of an office for the practice of architecture at 1434 St. Catherine Street West, Montreal, Canada.

William M. Rich has opened an architectural office at 11 South La Salle St., Suite 915, Chicago, Ill.

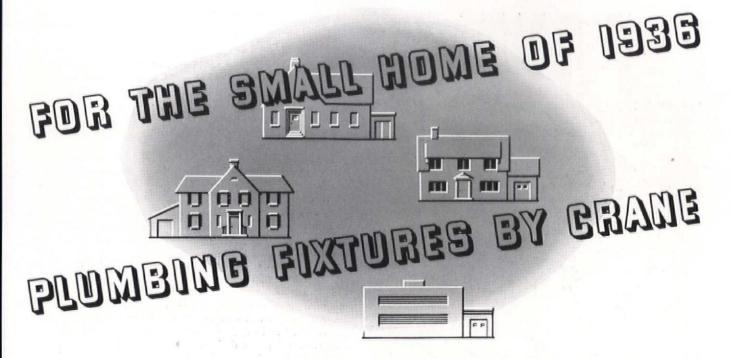
Lucille Shutes, 1221 O'Farrell St., San Francisco, Calif., has opened architectural offices at that address.

ANNOUNCEMENTS, SCHOLARSHIPS AND COMPETITIONS

For Freshmen only. At the College of Fine Arts, Syracuse University, five scholarships (one \$300, four \$150) will be awarded on July 11, on the basis of 1) drawing; 2) preparatory school record. Further information from Dean H. L. Butler, College of Fine Arts, Syracuse, New York.

September, 1936, will see a basic change in the instruction of architecture at Harvard University. All general preparatory work will be done in the College; will include the "cultural" courses, lead to an A.B. degree. The graduate, professional course will be given by the School of Architecture; will teach only one subject, design. Thus, with little interruption for lectures, advanced students will work almost continuously at their drafting tables, will get much more out of their graduate work.

Two hundred dollars and two weeks' holiday in the Old
(Continued on page 68)



DESIGN, arrangement and materials in small home construction have come under the critical microscope. Everything must stand enlightened tests—the old as well as the new. The small house of 1936 is going to hit a new high—in practicability, in honesty of materials, in beauty, in economy.

Certain established pieces of home equipment, designed and engineered with an eye to the future, will survive the most acute appraisal. Crane fixtures for the bath, kitchen, laundry and heating plant will be among

these. For high quality, convenience, beauty and economy are inherent in them.

To the man who built yesterday, and the man who is going to build tomorrow, Crane fixtures represent what he most desires in equipment for his home. We present herewith five Crane products for bath, laundry, and kitchen. They will make the small home of 1936 a better place in which to live. They can be specified with full confidence that the owner could ask no more in beauty and convenience, no less in cost.

BEAUTY · ECONOMY · DEPENDABILITY



Crane CORWITH Bath — Trim, graceful. Porcelain enamel on durable cast iron. A variety of fixtures, including built-in shower.



Crane CORONADA Lavinet

— A cabinet lavatory.
Generous space for towels,
tailetries. Rainier fixture
gives greater slab space.



Crane MAURCLONIA Closet—A close-coupled closet.
No connections visible. Reverse trap with jet. Efficient, moderate in cost.



Crane EVERBRITE Laundry Tub—Glistening solid porcelain (all clay), rounded corners, easy to keep clean, impervious to stains, low in cost.



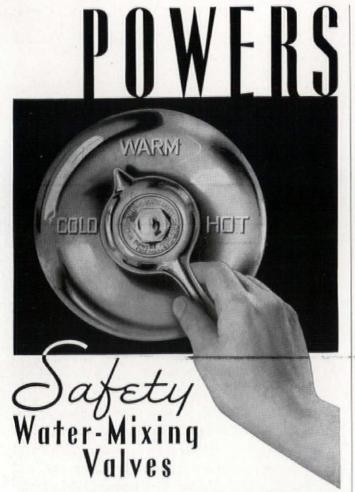
Crane SUNNYSIDE Kitchen Sink. Enameled durable cast iron. Steel cabinet with drawers and storage space ingeniously arranged.

CRANE

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For Shower Baths—Powers mixers prevent scalding caused by failure of cold water supply, or by pressure changes due to use of nearby showers, faucets or flush valves. They keep the temperature of the shower where the bather wants it without any "shots" of cold or scalding hot water.

Group and Gang Showers—Powers mixing valves are also used for the control of water temperatures of showers in groups of from 2 to 20 showers. They may be used to establish a maximum temperature in the hot water supply so as to protect the entire group from danger of scalding or to place the entire group of showers under the control of an attendant.

Zone Showers—Where compulsory bathing is required before entering swimming pools, lane showers are divided into four zones, each controlled by a Powers valve. First zone is maintained at 105° F; second at 90° F; third at 75° F; and fourth at 60° F. Because of its efficiency and its hygienic and sanitary advantages, this type of shower is rapidly increasing in popularity.

Hospital Hydrotherapy—In infant baths, continuous flowing baths, control tables, douche baths, arm and leg baths, colonic irrigation apparatus, photographic baths, and hot water line control, Powers mixing valves are indispensible because of their safety features.

Write for bulletins: The Powers Regulator Co., 2720 Greenview Ave., Chicago or 231 E. 46th St., New York. Offices in 43 Cities—See your phone directory.



FORUM OF EVENTS

(Continued from page 66)

White Art Colony (June or July), or 2) \$50 and one week's holiday at the Colony, or 3) \$25 and one week's holiday there for the three best paintings or water colors, in full color, of the Greenbrier Hotel, White Sulphur Springs, West Va. Open to all, the contest closes June 1. Write Robert B. Parker, Contest Director, Greenbrier Hotel, White Sulphur Springs, West Va.

The Cornell College of Architecture announces a course in Design for advanced students in their Summer Session, opening June 27. Tuition: \$50. Applications are also being received for one \$400 Fellowship, three Graduate Scholarships and five Undergraduate Scholarships—for the 1936-7 academic year. Information and application forms from the Dean, College of Architecture, Cornell University, Ithaca, N. Y.

Two national competitions are announced by the Treasury Department, Washington, D. C. 1) Three mural panels (\$2,000 each) for Department of Justice Building. Subject: some phase of the administration of justice in relation to contemporary U. S. life. 2) Two sculptures for a facade of Bronx (N. Y.) Post Office at \$7,500 each. Open to all U. S. artists, mural panel designs must be received by Procure-

ment Division, Section of Painting and Soulpture, Federal Warehouse, Washington, not later than June 1; sketch models of sculpture, by May 15.

Low Cost Housing Conference, April 16 and 17, at The Pennsylvania State College. Architects, contractors, executives, bankers and others cordially invited to attend, detailed programs will be ready by April 1. Write: J. B. Helme, Professor of Architecture, State College, Pennsylvania.

OBITUARIES

EMLYN LAMAR STEWARDSON, F.A.I.A., 73; after a year's illness, at Atlantic City, N. J., February 10.

Emlyn Lamar Stewardson was born in Philadelphia on January 6, 1863. After early education at Germantown Academy, and St. Paul's School, he entered the University of Pennsylvania. In 1887, he became associated with the architectural firm of Cope & Stewardson (his brother) in Philadelphia. Later he entered into partnership with James P. Jamieson; finally with George B. Page.

During his life he planned many buildings for educational centers, notably at Haverford, Bryn Mawr, Princeton, U. of P. and Washington University in St. Louis. He also was architect for the Municipal Building in Washington, and for the Glen Mills School and the Sleighton Farm, Darlington, Pa.

During the war he was with the Red Cross in France. His clubs were the Philadelphia and the Rittenhouse.

Frank Augustus Bourne, architect, 64; in Boston, Mass., February 15.

Frank A. Bourne was born in Bangor, Me. After two years study at the University of Maine he transferred to Massachusetts Institute of Technology, graduating in 1895. He received his M. S. in 1896.

An author as well as an architect, he wrote many articles and books on architecture: "Study of the Orders of Architecture," and (with H. V. von Host and F. C. Brown) "Architectural Drawing," etc.

In his architectural work he designed many churches, the Winchester Congregational Church, the Bangor Congregational, the Mission of the Epiphany in Dorchester, the Church of all Nations, Our Lady of the Snows in Dublin, and countless others. Other designs were the Ray Memorial School and the Dean Academy Science Building in Franklin. Mass.

The Beauty of Your Design TERRAZZO Endures in Floors of Fine



Illustrating the adaptability of fine terrazzo to residential construction this library floor presents a permanently pleasing rug design in complete harmony with the room.

Lo be worthy of a place in fine residences, a flooring material must permanently preserve the beauty of your design. For years after it is executed in the pattern and colors you conceive, it must present the same pleasing appearance that you planned in designing the floor. Only a durable floor material can show, year in and year out, the colorful artistry of the original design.

Floors of terrazzo are durable floors. Permanently satisfactory, they win the same praise through the years that was theirs at the time of installation.

Adaptable to the pattern you conceive and the color scheme you desire, easily cleaned and maintained at a minimum, fine terrazzo floors have a definite place in the residential field. Detailed information and specifications will be furnished promptly at your request.

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• The best judges of paint for exterior use are architects and painters.

Architects specify pure whitelead. A recent survey shows they favor it by 3 to 1. But what about painters?

What is the choice of the men who work with paint day in and day out? What do they use when the selection is entirely theirs?

Not long ago a questionnaire was sent to painters by the Forest Products-BetterPaint Campaign. It asked what they used on their own homes. 86 out of every 100 answered "Pure white-lead"

This overwhelming preference is based, of course, on years of experience. Painters, more than any

other individuals, have had a chance to observe white-lead's ability to stand up for long periods under the most severe weather conditions.

White-lead paint does not crack and scale. On the contrary, it wears downstubbornly by gradual chalking, which leaves a smooth, unbrokensurface, an ideal foundation for new paint. Moreover, it can be mixed to suit the requirements of the job and tinted to

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Dutch Boy White-Lead — good paint's other name — has long been respected for its high quality both by property owners and those who deal with paint professionally.



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Specify this shingle for these conditions:

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Carey Cork-Insulated Shingles have been proved in service in all sections of the country. Approved by the Underwriters Laboratory. See catalog in Sweet's for specifications on complete line of Carey Roofs, or write for samples. Address Dept. 20.

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Providing SAFE air-conditioning in the Hershey Windowless Office Building



The Hershey office building, Hershey, Pa., is air-conditioned by two separate 135-ton systems, installed by York Ice Machinery Corp. Both systems are identical, using York 14 x 10-in. double cylinder "Freon" compressors direct connected to a 125-hp. synchronous motor.

Complete Dependence on the Air-Conditioning System Requires Maximum Safety in the Refrigerant. Naturally, "Freon" is Used

Hershey employees in the new windowless office building (the first of its kind) are completely sealed from outside noise, dust, disturbance. They are kept informed about outside weather conditions by a special signal system of colored lights. They work under conditions scientifically designed to protect their health and efficiency. The slightest danger from unexpected mishaps in the air-conditioning system is removed by use of "Freon," the safe refrigerant.

"Freon" is non-poisonous, nonflammable, non-explosive. It is odorless when mixed with air up to 20% by volume. It has been tested by the U. S. Bureau of Mines, and meets all the specifications set by the Underwriters' Laboratories of Chicago.

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On the other hand, concrete can be moulded into the most intricate sculptured detail at low cost . . . forms irregular surfaces without waste . . . gives the designer a wide choice of pleasing textures: smooth (plywood or fiberboard forms); grain marked (unfinished or dressed lumber forms); rough textures with exposed aggregates; dash-coat or trowelled stucco.

Among the scores of recent architectural concrete schools, churches, factories, commercial buildings and

Architectural Concrete

other structures, you'll find every architectural type. Some of the most notable of these buildings are being featured in national advertising in *Fortune* and *Business Week* throughout 1936.

To help you design in concrete, let us send Information Sheets covering specifications, construction details and textures.

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THE OF CONCRETE

How to build with concrete for beauty, firesafety and long years of home enjoyment at lowest cost

No other material for home building has seen things "happen to it" so fast lately as concrete.

Architects are exploring anew the beauty possibilities afforded by its many textures and tints. Builders, lending agencies, insurance companies and prospective owners alike are eyeing concrete as a fundamental means of getting a better home for the money, be it cottage or mansion.

The trend toward more careful home planning and higher construction standards is reflected directly by a steady increase in the use of concrete. The percentage of new homes built with concrete in 1935 was the *highest ever*. Thousands of inquiries are now flooding in as a result of our national advertising—further evidence that concrete has arrived.

What IS a concrete home?

A modern concrete home is built with concrete walls and floors and a firesafe roof.

Why more desirable?

The concrete home possesses a charm all its own. Concrete adapts itself to any architectural style.

The concrete home offers the priceless security of real firesafety — firesafety to a degree obtainable only when structural walls and floors are built clear through of a fireproof material.

The properly built concrete home has the important quality of rigidity—walls don't crack, floors don't sag, shake or squeak underfoot or become uneven. Windows and doors open and shut without jamming or sticking.

Termite-proof?

Yes! Concrete homes are safe from the attacks of these destructive insects that damage buildings to the tune of 40 million dollars annually.

Will people like concrete floors?

Again, yes! Concrete floors can now be built so economically that the ordinary small home can have these warm, dry, rigid floors — formerly used only in the finest hotels, apartments and mansions.

Concrete floors may be covered with hardwood, linoleum or carpeting, or simply marked in tile patterns, colored and waxed. A different treatment in every room if you wish.

How shall I build the walls?

CONCRETE MASONRY. Concrete ashlar masonry walls are rapidly gaining in popularity because of their

distinctive appearance and economy. Patterns and treatments shown below.

REINFORCED CONCRETE. Monolithic walls are molded in forms and given any desired finish—form marks frankly capitalized, or concrete smoothly formed and given bush hammering, brooming, acid washing, stucco dash coat, cement paint, or other treatment to provide the desired finish.

Pitched roofs should be fire protected. Colored concrete roofing tile or cement-asbestos shingles are recommended. Flat roofs with insulation are built according to any standard method of concrete construction,

What is the cost of concrete?

Surprisingly low! Recent developments have brought the cost of concrete well within that of any fireproof type of construction, and very close to



CONCRETE

Laid with ordinary bond. Insulation furred out from interior face. Exterior given coating of portland cement paint or finished with portland cement stucco.



CONCRETE MASONRY WALLS

HOLLOW

Separate walls laid with varying types of bond. Insulation may be added in space between walls. Concrete ashlar masonry is obtainable in a wide range of warm tones.



RANDOM

ASHLAR
Laid in a wide variety of patterns.
Insulation may be applied direct or furred out from inside face of wall.
May be coated with waterproof portland cement paint.



"The Portland," model home built with concrete walls and floor and a firesafe roof. Designed and built by Homecrafters Service, Inc., at "Mayfair Acres," Greenburgh, near White Plains, N. Y. Says a Mayfair Acres executive, "I am more and more convinced that this type is far superior to other types of home construction."

the price of non-firesafe construction.

Lower insurance rates, freedom from repair and maintenance bills and slower depreciation result in a saving equivalent to eliminating a "hidden mortgage" of hundreds of dollars. It costs less per month to live in a firesafe concrete house.

What concrete means to YOU

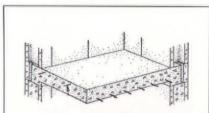
To architects: Concrete offers a virtually unexplored new medium of design.

To builders: It is the "something new" home buyers are looking for—a cue for that new demonstration home!

To realtors: Concrete exemplifies the high construction standard and sound values on which you are building new business futures today.

To finance agencies: Here is the answer to the challenging problems of twenty-year mortgages-low depreciation, high resale value.

To Mr. and Mrs. home buyer: Concrete construction has advanced so fast that not all builders are "up" on the latest methods. But, in or near your community, are reliable builders and architects experienced in concrete. Ask any reliable local concrete man for information. By all means, before you build any type of home, have it estimated with firesafe concrete walls and floors.



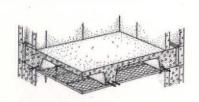
SOLID SLAB CONCRETE Reinforced slab of uniform thickness.

TYPES OF CONCRETE FLOORS



PRECAST CONCRETE JOISTS

Factory-made joists of reinforced concrete support a concrete slab in this type of firesafe floor construction. Joists may be covered or left exposed and painted to make attractive beamed ceiling.

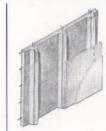


RIBBED CONCRETE Ribs cast integrally with the slab.

SOLID

Insulation applied to interior surface either over furring strips as illustrated, or direct. The exterior surface is the finished wall. (Walls sometimes built hollow-double with air space between.)

REINFORCED CONCRETE WALLS



RIBBED

Rigid insulation is applied to the face of the ribs as a plaster base — or lath and plaster may be used with insulation placed between the ribs.

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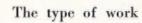
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REMODEL A HOME or BUILD A SKYSCRAPER

we can help you ...

JOB

ELECTRICAL ITEM



architects will do this year will be varied

in scope. It may be the remodelling of a house.

Or it may be the building of a large public building.

Or a skyscraper . . . But no matter what the job, Graybar can help on any electrical problem. Graybar's service of supply, operating through 79 conveniently located warehouses, can help you maintain time schedules by bringing any or all electrical items to your job quickly and economically.

And Graybar's 67 year old reputation is your guar-

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THE ARCHITECTURAL FORUM announces for May:

RESIDENTIAL PORTFOLIO

Thirty-five pages presenting six large and small houses designed by William Wilson Wurster. This first published collection of work by one of the country's most distinguished residential architects is replete with interior and exterior photographs, floor plans, close-up studies of detail, descriptive notes, comment, and specifications. Notable for its completely unconventional and modern approach to individual problems, Architect Wurster's work is here shown as it ranges from distinctly formal concepts to rustic adaptations. These houses of wood, brick, and stucco are of immediate interest not only for their own intrinsic merit but also because, as a group, they display Architect Wurster's individual contribution to the development of American domestic architecture.

ALL GLASS BRICK

The new Toledo Research Laboratory Building of the Owens-Illinois Glass Company—all glass brick—inside and out. Photographs, plans, construction outline, with notes on air-conditioning plant.

BEAUTY SHOP

Holabird and Root design a swank modern beauty shop. Interiorexterior photographs with data giving all essential special information on plan and equipment.

APARTMENT TREND

Interior-exterior photographs, floor plans, specifications for a 1936 Manhattan apartment, chosen because it is typical of the new building trend toward smaller living units.

REMODELING FOR PROFIT

Portfolio presenting four successful examples of old buildings remodeled for increased income—a Philadelphia brownstone gets a glass brick facade, emerges as an office building; modern store fronts and apartment quarters transform two more white elephant properties; a large outmoded residence is adapted for a funeral home.

MOUNTAIN BOOM

What the basic factors were that localized the U. S.'s greatest 1935 home-building gains in the Mountain states.

As this issue goes into the mail there is a strictly limited number of April copies of The FORUM available for new subscribers. To enter a new subscription, or renew an old one (starting either with the April or May issue) simply sign and mail the attached card—it needs no stamp.

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THE ARCHITECTURAL FORUM

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Cut to SIZE? We'll DO it! Cut in PRICE? We've DONE it!



UN-standardized kitchens

HOW often when planning a Monel Metal kitchen, you've discovered that because of the position of a window, alcove, or what not, you're up against an unusual set of conditions. You intended to use a Whitehead sink and cabinet unit . . . you have found they make kitchens easy to plan. But in this particular kitchen, let's say, the unit you had hoped to use would be too long on one side. What to do about it?

Until recently, the only answer was . . . have the sink made to order. But see what that extra expense would do

to your budget.

That was the only answer. But no longer. Where the only way you can make a harmonious and convenient arrangement of your kitchen is to cut down one side of the sink unit, Whitehead has now made it possible to do just that. We did it with the 111" sink unit shown here, in this Domestic Science kitchen.

Perhaps you'll need this special service often . . . or not so often. But it's a help to know you can use it when you need it. We know you're anxious to put Monel Metal's sparkling advan-tages at your clients' disposal. Whitehead has gone the whole length to make this possible for you. You can get Whitehead sink and cabinet units, in any fractional size from 48" to 144".



One of the Monel Metal cabinet sinks, regular size 111", with left hand drainboard cut down, in use in the Domestic Science kitchen shown below.

General view of the Domestic Science kitchen at Lower Merion Junior High School, Ardmore, Pa. Architect: Savery & Sheetz, Steven Grard Bldg., Philadelphia. There are six Whitehead Monel Metal cabinet sinks. Installation handled through cooperation of the Phila-delphia Gas Range Co., 1117 Chestnut St., Philadelphia.

So this new "extra" service is right in line with their policy

And the prices of Monel Metal sinks and work surfaces have been reduced . . . possibly since the last time you specified one. Get in touch with your local Whitehead branch for information, sizes and prices. Or write direct to: Whitehead Metal Products Co. of New York, Inc., 304 Hudson St., New York, N.Y.

THE INTERNATIONAL NICKEL COMPANY, INC.

NEW YORK, N. Y. 67 WALL STREET

Monel Metal is a registered trade-mark applied to a loy containing approximately two-thirds Nickel and one-third copper, Monel Metal is mined, smelted, refined, rolled and marketed solely by International Nickel.

MONEL METAL "TAKES" DOMESTIC SCIENCE

Monel Metal's qualities are useful to any kitchen, in school as in private home. Monel Metal is solid; it cannot chip, crack, or peel off. It is absolutely rust-proof. Pots and pans do not mar its beauty. Of particular value to a school kitchen is the way Monel Metal minimizes noise. With these sinks no dishpan is needed; dishes are washed di-rectly in the sink. Even students, new at dishwashing, find that Monel Metal's resiliency makes breaking dishes a rare occurrence.

Monel Metal

• The average person spends more than half a lifetime between four walls. Can the need for ample fenestration be questioned? Can the vital importance of quality in glass be over-emphasized?



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LIBBEY. OWENS. FORD

uality glass



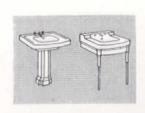
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Oure OF ACCEPTANCE

THIS NEW KIND OF PLUMBING FIXTURES

- Here is a new product—yet having behind it the reputation of leaders in three great industries (steel, stamping and enameling). At last it has been possible to adapt to plumbing fixtures the manifold advantages of formed or pressed metal and the "wet process" of porcelain enameling.
- The structural strength of formed metal construction is well known. Formed metal plumbing ware weighs less than one-third as much as cast iron and this reduction in weight makes for economies in handling, transportation and installation. In hotels and apartment buildings, it effects considerable reduction in dead-weight loads and actual construction costs.
- This new kind of plumbing fixtures is made from heavy gauge sheets of Armco Ingot Iron. Its wide expanse of perfect porcelain enamel has a smoother finish, a higher lustre than can be produced on cast iron. It is more attractive, is cleaned more easily.
- Because it is made of the famous Armco Ingot Iron, this new ware carries with it the prestige and acceptance that housewives for years have associated with a great number of products carrying the familiar Armco Label.
- If your file does not contain complete information on this latest development in the field of plumbing goods, write us.

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Sylphon Thermostatic Water Mixers effectively limit the maximum temperature of hot water delivered to bathrooms, gang showers and kitchens, below the scalding point regardless of storage tank temperatures.

Utilizing hot water from any usual source, they regulate the amount of cold water required to temper the hot to the desired degree, actually mixing the two together before delivery.

Uneffected by sudden fluctuations in temperature or pressure of supply water, they assure accurate maintenance of safe temperatures, protect porcelain and plumbing fixtures. They not only save hot water but effect increased capacity of storage tanks by permitting water to be stored at higher temperatures.

The complete line ranging from sizes for individual showers to sizes for entire sections of large residential, commercial and industrial buildings, is described in Bulletin GA 40. Ask for it.

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Sales Representatives in Principal Cities

BOOKS

(Continued from page 31)

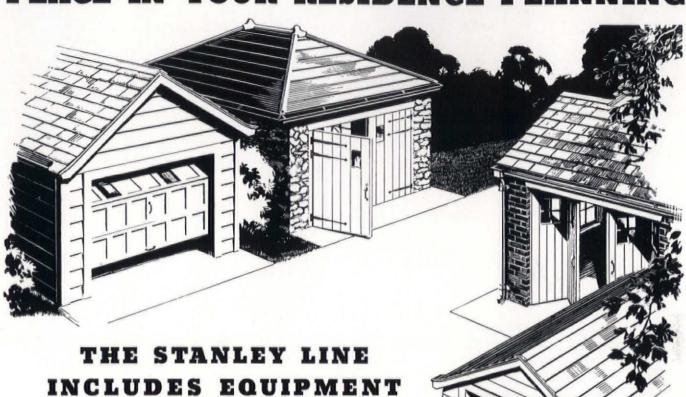
brotherhood: Ruskin's writings with their admixture of ethics and art criticism impressed him enormously, making architecture seem as noble a career as the church, and he entered a London office as an apprentice, spending about six hours a day outside the office on figure drawing. Morris' contact with architecture was disillusioning: he had gone into it with romantic visions of Gothic churches only to find a complicated office routine, endless practical details, innumerable petty obstacles between him and his dreams. The interlude was not entirely profitless, however; while there he become friends with Philip Webb, who later designed the Red House for Morris and his bride, becoming also a member of the firm of Morris & Co. After this episode he turned to painting under the urging of Burne-Jones and



CARTOON FOR MURAL PAINTING, 1874

Rossetti, and it was as he began to paint that he started his first venture in design. Short of temper and unusually strong, he had difficulty finding furniture that could pass through his periodic outbursts without serious damage, and to remedy the situation he designed pieces calculated to withstand being thrown through doors. When he married, and built the Red House, he designed most of the furniture that went into it, persuading his friends to help decorate the interiors. This joint enterprise led to the formation of Morris, Marshall, Faulkner and Co., with Morris as manager and chief source of funds. The expressed object of the firm was "to produce that harmony of decorative effect to be achieved by a band of artists working in concert as their various tasks." This idea was in direct opposition to contemporary practice: machines had debased the arts and crafts to an appalling extent, turning out cheap imitations of costly handwork, to the detriment of both products and craftsmen. The firm's first success, at the Exhibition of 1862, demonstrated the validity of its idea; it was their stained glass which attracted attention to such an extent that competitors claimed it was old glass touched up. The actual reason for its excellence was that instead of mechanically producing the glass from a given design, the design itself was built up in living glass, and every stage of its manufacture was controlled by men who not only understood the technique, but the intent of the designer. Further successes followed, but the firm's financial position remained precarious, chiefly due to the fact that Morris would make no compromise with quality, and ran up the costs of manufacture to a point (Continued on page 82)

Carefree GARAGE DOORS HAVE A PLACE IN YOUR RESIDENCE PLANNING



FOR ALL FOUR TYPES

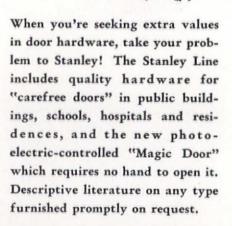
Because of the extra values it offers you, Stanley Garage Door Equipment has a place in your residence planning. You're seeking more than door hardware - and Stanley gives it to you - in equipment that makes garage doors lastingly carefree . . quiet, smooth working - as long as the building stands.

This part of the Stanley line includes hardware for swinging and folding garage doors, as well as the exclusive equipment for the "Roll-Up" and "Swing-Up" types. Properly specified and installed, Stanley Garage Door Hardware lengthens the life of the doors, maintains their appearance, and keeps them uninterruptedly useful.

Next time you plan a garage, look into Stanley Garage Door Hardware. You will find in this complete line the proper equipment to fill a wide range of requirements.



THE STANLEY WORKS, New Britain, Conn.

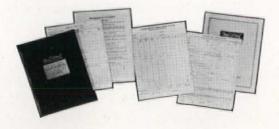


FOR Carefree DOORS USE STANLEY HARDWARE



The Gar Wood Tempered-Aire System continues to be the outstanding achievement in the air-conditioning field. Its astonishing economy is largely due to the Economizer working in coordination with the blower. All of the cold return air is pre-heated by being forced between the Economizer tubes—thus extracting heat from the hot gases leaving the firebox. This combination effectively uses heat that would otherwise be wasted up the chimney and makes air-conditioning an economy, instead of an expensive luxury.

Scarcely less interesting from the architect's viewpoint, is the scientific and practical installation co-operation which is available to him through any of the Gar Wood Branches or Distributors. This system makes correct results simple and certain. Full particulars furnished on request.



These forms aid computation, eliminate costly errors, insure proper installation and correct results.

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Heating Data for Architects,
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BOOKS

(Continued from page 80)

where they could not possibly sell and still make money. A few members dropped out in 1874, and the firm became simply Morris & Co. Morris had proposed so many extensions of activities which represented a large outlay for new plants and more workmen that even the most hopeful members became worried. The most important project was a dye plant; the introduction of aniline dyes had put the vegetable dye makers out of business, and the new dyes were not only harsh, but many of them faded quickly and some even changed color, a situation rendering any serious attempts at textile design futile. Morris revived the art after much study of old books on the subject and the venture was a complete success. With his dye problem solved, he went into printing on textiles and weaving. Here, as in other fields, the process was the starting point for the design. A similar procedure obtained when the firm took up tapestry making: Morris learned how to weave tapestries before designing them, and he installed looms of the high-warp type so that the worker could do more than merely copy a design. Carpets, which came shortly afterwards, were frankly machine-made products, and Morris even made designs for linoleum. Bookmaking was one of the last of his activities, and here again he gave new life to an art debased by the misuse of industrial processes. He established the Kelmscott press, designed two type fonts, and supervised the preparation of 50 books.

There is much in this study of Morris besides the history of his career as a designer; while the book makes no claim to being either a definitive biography or an exhaustive survey of all his work, it does give a clear and complete picture of the man and his life. Morris, in the final analysis, was only a man of his time, much as he objected to its less attractive aspects, and his time is still too close to us to permit complete approval, or complete understanding of the saccharine quality and the somewhat superficial medievalism that characterizes much of his work. In his approach Morris was a modern, and he probably would have understood the aims of the modern movement. He had no grievance against the machine as the machine: it was its use to debase the arts that he fought all his life, but with his ideal of happy workmen, all creators of beauty, each projecting something of his own personality into his work, it is not likely that mass production, even of articles appropriately designed, would have appealed to him. It is the superiority of his approach and the intelligence of his methods that deserve study and emulation. In the many fields that Morris entered with such brilliant success our own time has produced few men of his stature.

A HISTORY OF MOSAICS, by Edgar Waterman Anthony. Porter Sargent, Boston. 333 pp., 80 illustrations, $7\frac{1}{2} \times 10\frac{1}{4}$. \$7.50

Mosaic is as old as architecture. All of the peoples of the Mediterranean Basin, Egyptians, Mesopotamians, Minoans, Greeks, and Romans, used it at one time or other, and fragments have been found which date from 4000 B.C. and earlier. Mosaic is a natural expression of the impulse to decorate; from the first pebbles and fragments of baked clay inserted in mud walls while they were still wet, it developed over millenniums to become the greatest form of purely architectural decoration.

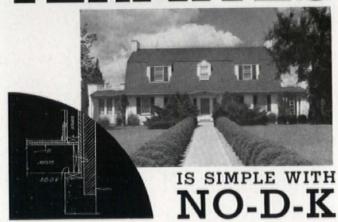
Mr. Anthony's scholarly history is the first in English, the most comprehensive in any language. The reason that no comparable work has appeared before this may be attributed to the degradation of the art which began in the Renaissance and has continued down to the present time. Mosaic at this

(Continued on page 84)





TERMITES



The foundation timbers of every new house should be protected against decay and the attacks of termites by an application of Eastman NO-D-K Wood Preserver. The cost is small compared to replacements and repair bills due to timbers being left unprotected. NO-D-K is easily applied with a brush or spray, or by immersion of the timbers. NO-D-K is approximately four times as toxic to decay fungi and termites as ordinary coal tar creosote, yet it will not burn the skin of workmen.

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Send at once your preservation guide and booklet entitled "Preservation with NO-D-K."

City

BOOKS

(Continued from page 82)

time was reduced from its status as an independent art in its own right to that of an imitation of painting, and the histories subsequently written tended to review mosaic as an inferior branch of mural painting.

The great achievements in mosaic came in northern Italy in the 5th and 6th centuries, and in Constantinople, Greece, and Sicily in the 10th and 11th centuries. It clothed the arches and vaults of the time with a dazzling skin of indescribable beauty in which material, design, and basic architectural form combined to form an ensemble whose essential rightness is one of the unmistakable signs of great art. During these periods the design was in charge of a master mosaicist; he frequently sketched the design in place, and was followed by his trained assistants who applied the final plaster coat and pressed the cubes into place. The result, as in other medieval work, came not from the unintelligent



MOSAIC AT DAPHNI 11TH CENTURY

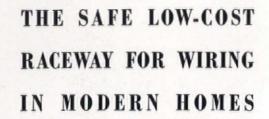
and mechanical copying of detailed cartoons, but from the cooperative efforts of capable artists who not only designed but executed the work. When the Vatican factory was started, a different procedure was followed: a painting was copied as accurately as possible by workmen who pasted the cubes face down on patterns, setting them in place after assembly. The Vatican produced some marvels of deception, but by so doing, lost all the vitality the art had possessed. It is interesting to note that this factory boasts a collection of some 28,000 differently colored cubes; the finest mosaics ever executed frequently contained no more than twenty.

Mosaic flourished when architecture was worthy of its tremendous possibilities: the niches of the Italian churches, domes and vaulted ceilings offered the ideal surfaces for a material whose great strength lay in its ability to catch and reflect light. Today a new architecture is arising which is adapted for the use of this great decorative medium: the plain surfaces resulting from modern structural methods were made for a material like mosaic. Such works as the Great Hall in the Town Hall of Stockholm and the very different banking room in the Irving Trust Company building in New York show the adaptability of the medium.

Intended primarily for artists and all students of art history, the book fills a gap in the working library of the architect interested in the enrichment of his buildings. The lengthy bibliography bears witness to the careful research done by the author, who has succeeded in so organizing his material that a consistent pattern is created, and a sense of continuity maintained from beginning to end.

(Continued on page 86)

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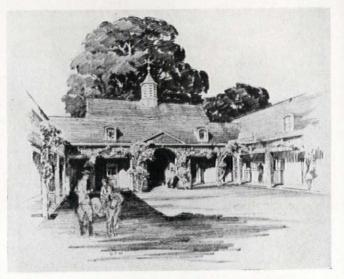
COLUMBUS COATED FABRICS CORPORATION, COLUMBUS — OHIO

BOOKS

(Continued from page 84)

SPORTING STABLES AND KENNELS, by Richard V. N. Gambrill and James C. Mackenzie. The Derrydale Press, New York. 139 pp., 120 illustrations, 9½ x 12¼. \$15.00

A sumptuously presented book on the design, construction, and equipment of stables and kennels, the result of a collaboration between a sportsman and an architect who has specialized in these buildings. It is well documented, containing numerous photographs of representative work in America and England. A large portion of the book is



PROJECTED STABLE GROUP

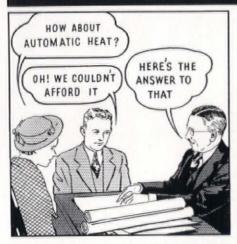
devoted to a series of designs of typical establishments ranging from the smallest to the most elaborate. While addressed primarily to the sportsman, the book covers its subject with the greatest thoroughness, and would be of undoubted assistance to the architect with a commission of this kind. All requirements of stables and kennels are examined, and the matter of equipment is discussed in detail. The book is well indexed and contains a bibliography.

ROMANESQUE ARCHITECTURE IN WESTERN EUROPE, by A. W. Clapham. Oxford University Press, New York. 208 pp, 58 plans, 44 plates. 53/4 x 81/4. \$3.75

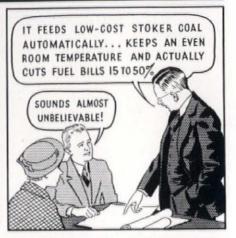
A short and lucid survey of Romanesque architecture throughout Europe. A scholarly history of this kind, brief but well documented, is a welcome addition to the literature on the subject, most of which is too elaborate and expensive to be within the reach of the average student of architectural history. The book was developed from a series of lectures delivered at Oxford in 1932, and has been amplified to include a review of the architectural sculpture which played so important a part in the European churches of the Romanesque period. Like similar histories, the book begins with 5th century work in Italy, follows its development in Sicily, Dalmatia, France, the Near East, England, and the northern countries. An excellent aid to study is the series of maps which indicate the location of the most important monuments in the various countries.

As a service to interested readers, The Architectural Forum will undertake to order copies of foreign books or others not conveniently obtainable locally, which have been reviewed in this department. Checks and money orders to be made payable to The Architectural Forum.

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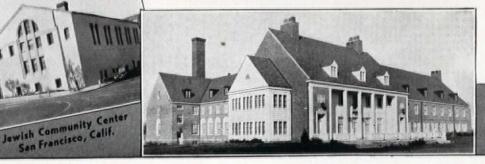
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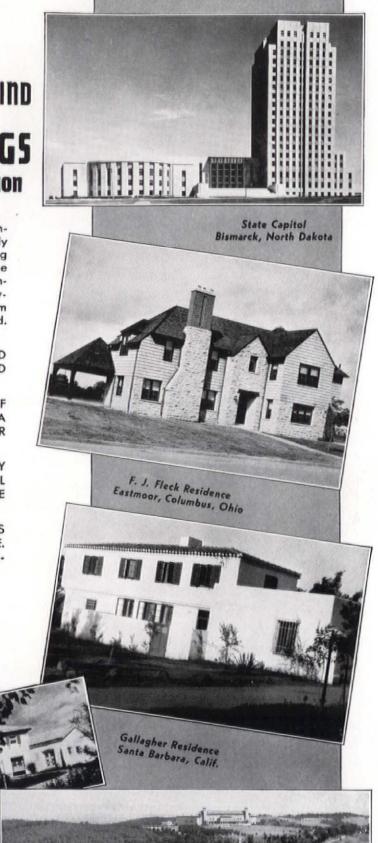
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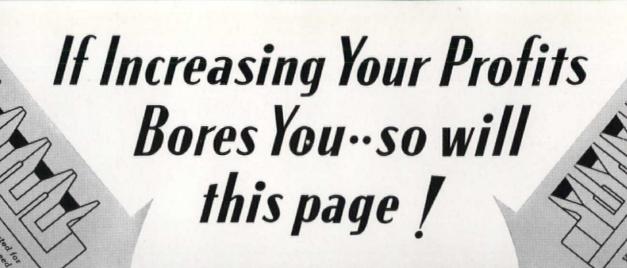
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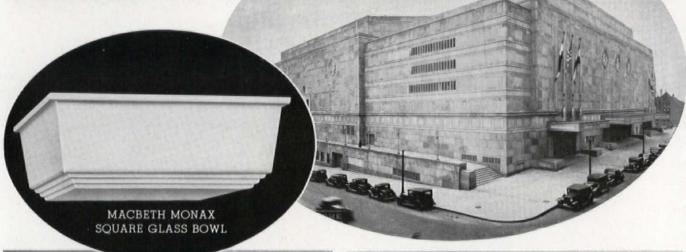
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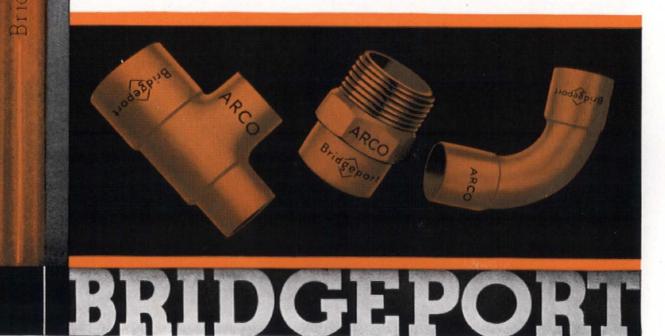
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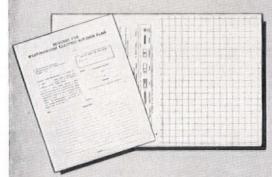


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This is the handy consultation request form, available for your use, on which kitchen size and other information can be sent to the Kitchen Planning Department for the scientifically arranged plan.







SEE THIS "ARCHITECT'S KITCHEN FILE"

It contains full information about the free consulting service we offer, the invaluable Kitchen Guide Book, and detailed specification sheets covering all sizes and types of kitchen appliances. A most valuable A. I. A. file, with everything on the subject assembled for handy reference whenever needed.

MAIL THE COUPON

kitchen serving SERVICE

Westinghouse Electric & Mfg	2.04	eld, O.
Send me full information Kitchen Plan Service and the		
Firm Name		
Attention of		



have given CONSTANT, satisfactory refrigeration with a VERY MINIMUM of service expense"

... reports MR. SAMUEL ROTHCHILD, of the Rothlere Building Corp., 766 Montgomery St., Brooklyn, N. Y.

REFRIGERATOR BUYERS no longer need to wonder what kind of performance they'll be getting in 1944 from equipment bought today. Not if they choose Electrolux Refrigerators! For the experience of builders and operators the country over has definitely proved the long-life advantages of "the flame that freezes." Even the earliest gas refrigerators, installed 7 and 8 years ago in Metropolitan New York apartment buildings, continue to give the same efficient, low-cost service they did when new.

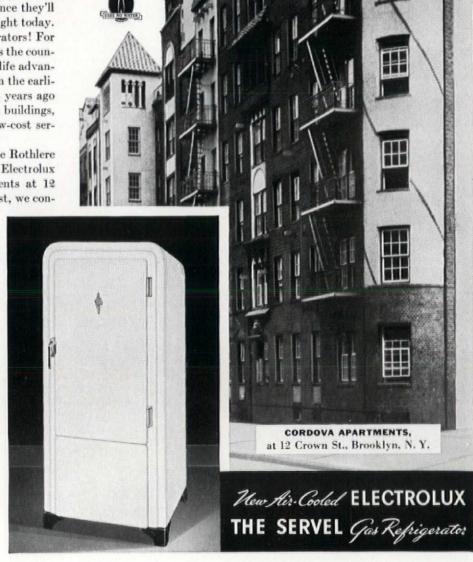
Writes Mr. Samuel Rothchild, of the Rothlere Building Corp., "We purchased our first Electrolux on March 14, 1928, for our apartments at 12 Crown Street. For after a thorough test, we con-

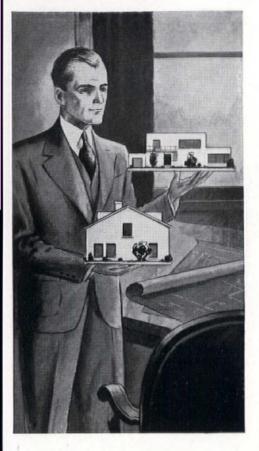
cluded that because of its simpler operating principle Electrolux would probably give longer service than refrigerators with moving, wearing parts.

CLAIMS PROVED

"After eight years' experience it gives me much pleasure to report that your claims for the Gas Refrigerator have all been realized. Our Electrolux Refrigerators have given constant, satisfactory service with a very minimum of service expense. The original low operating cost has not been increased after all these years. The Gas Refrigerator has been very popular with tenants, too, who find Electrolux as silent and dependable as ever."

For full information about this modern gas refrigerator, see your local gas company. Servel, Inc., Electrolux Refrigerator Sales Division, Evansville, Indiana.





Why Flat Roofs Should Have Koppers Roofings

The roofing you select for a flat roof should be able to withstand prolonged contact with water. You can depend on Koppers Coal Tar Pitch and Felt to do that. Water causes no deterioration of Koppers Coal Tar Pitch. In fact, this material has been successfully used on flat roofs constantly sprayed with water from air conditioning systems.

Let us send you information about residence roof construction with Koppers Coal Tar Pitch and Felt.



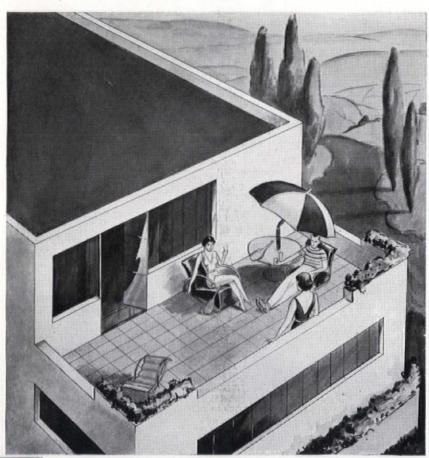
KOPPERS PRODUCTS COMPANY KOPPERS BUILDING PITTSBURGH, PA. KOPPERS COAL TAR PITCH

KOPPERS COAL TAR PITCH
KOPPERS TAR-SATURATED FELT
KOPPERS TAR-SATURATED FABRIC

Why Buildings Should Have Flat Roofs

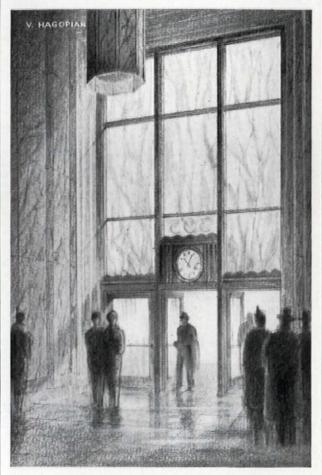
The flat roof is steadily growing in architectural importance. There are many reasons for its rising popularity.

- 1 THE FLAT ROOF IS MORE ECONOMICAL TO BUILD: It eliminates cubage not needed for headroom.
- 2 THE DEAD AIR SPACE PROVIDED BY SLOPING ROOFS IS NO LONGER NEEDED: Better insulation can now be obtained with an inch or two of modern insulation than with the dead air space.
- 3 THE FLAT ROOF PROVIDES GREATER USEFUL AREAS: Roofs and porches can be utilized for recreational or living purposes.
- 4 THE FLAT ROOF IS EASIER TO MAINTAIN: Easily reached and inspected.
- 5 THE FLAT ROOF IS SAFER: There is less danger of anything breaking loose and dropping to the ground.



Koppers Products Company, Pittsburgh, Pa.	A F-3
Please send me specification book for Koppers Roofings.	
Name	
Firm	
Address	

LUMAR panels over the doors illuminate and decorate this entrance lobby



A new development which liberates all the "hidden" beauty of marble

LUMINOUS MARBLE

Now the inner beauty of marble, the most delicate gradations of color, texture and shading, are available in Lumar, the latest development of the Vermont Marble Company.

LUMAR is fine marble, made *luminous* by a special process. It is available in a variety of combinations and contrasted veinings of yellow, green and red.

LUMAR has the intensified natural beauty of marble—and, at the same time, diffuses day-light or artificial light better than opal or stained glass. Thousands of uses in architecture and decoration are possible.

No drawing, photograph or description can do justice to the unusual beauty of LUMAR. See it for yourself at our branch offices. For detailed technical information, write us direct.

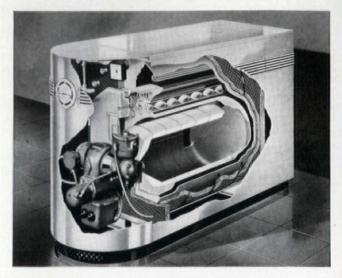
VERMONT MARBLE

PRODUCTS AND PRACTICE

(Continued from page 15)

401. BOILER BURNER UNIT

Lurelle Guild styled the jacket which encloses the National Radiator Corporation's National Williams Oil-O-Matic Boiler Burner Unit. The steel boiler is of the fire tube type. Each tube contains a twisted strip of heavy gauge steel which slows up the passage of the hot gases and throws them against the sides of the tubes, permitting rapid heat transfer. Withdrawing these "Turbulators" removes most of the soot which tends to collect in the tubes. In the boiler is a submerged copper coil Taco heater for domestic hot water. Controls make it possible to use the unit for domestic hot



water alone when heating is not required. A McDonnell & Miller low water cut-off prevents damage to the boiler in case water falls below normal level.

This boiler burner is extremely compact and is only waist high. It is enclosed in a red jacket with a black base and aluminum trim and it is shipped from the factory completely assembled.

402. AIR CONDITIONING ECONOMIZER



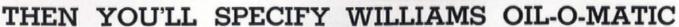
The York Ice Machinery Corporation makes an "Economizer" which they claim will reduce the water consumption of air conditioning systems by as much as 99 per cent. It was designed to save water costs and reduce the danger of water shortages, a matter of concern to city authorities because of the increased consumption of water due to air conditioning installation. It is a combination of a forced draft cooling tower and a refrigerant condenser and can be installed either in or out-of-doors. If it is used indoors ducts are provided to bring in outside air. and to exhaust heated humidi-

fied air to the atmosphere.

A fan circulates air through a bank of bare pipe coils over which water trickles in a direction opposite to the air flow, the refrigerant being condensed inside the coils. Cooling water is recirculated from the drainpan by a small pump. The

(Continued on page 104)

Check Oil Burners on These 7 Points



THERE is a reason why so many architects and heating engineers specify Oil-O-Matic.

Oil-O-Matic is the world's fastest selling oil burner. It has been the leader in its line for seventeen years, with a record of two hundred thousand installations.

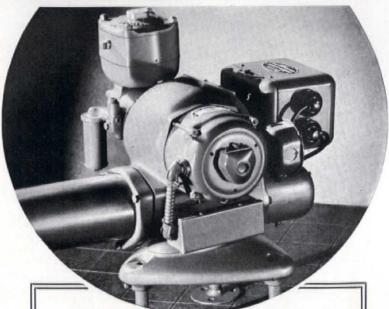
Oil-O-Matic is made by Williams Oil-O-Matic Heating Corporation, the world's largest specialists in temperature control.

Oil-O-Matic is the only oil burner which checks on all the 7 important "musts" for oil burners.

Oil-O-Matic is built in five different sizes to meet the widest range of heating requirements. For new construction it is provided in complete boiler-burner and furnace-burner units. For remodeling jobs it can be quickly installed in any furnace or boiler; steam, vapor, hot water or hot air. For useful and precise data for your files, mail the Architect's coupon below.



Also manufacturers of Williams Ice-O-Matic Household and Commercial Refrigeration and Williams Air-O-Matic year round controlled weather



Oil-O-Matic and only Oil-O-Matic Meets All Seven Requirements!

- Does it atomize at low pressure, insuring quiet and complete combustion and long life?
- Has it projected flame burning in mid-air away from the burner, with all mechanism outside the combustion chamber away from the heat?
- ✓ 3 Has it diffusor to insure, with any oil, a perfect blending of oil and air producing a steady, unwavering flame?
- V 4 Has it positively operated automatic safety shut-off valve?
- Will it burn the economical, heavier, low-priced fuel oils?
- Has it metering pump feeding unvarying quantity of oil regardless of viscosity or temperature?
- 7 Is the manufacturer financially responsible specializing exclusively in temperature control devices?

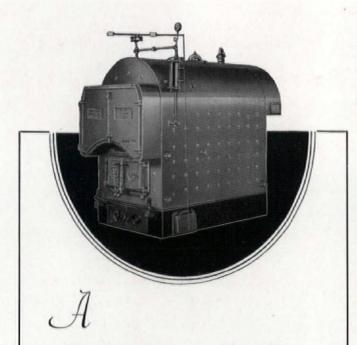
The Williams Oil-O-Matic Water Heater is made in three sizes

-home, heavy duty, and commercial. Horizontal in design for
fuel economy. Complete unit includes water reservoir, combustion chamber, burner, and full automatic control.



Memo for your secretary—Mail this coupon today
WILLIAMS OIL-O-MATIC HEATING CORPORATION
Bloomington, Ill.
AF-4
Please send me for my files, "The Architect's Handbook
of Williams Oil-O-Matic Heating".

Name	
Address	
City	State



Burnham Made Welded

Steel Boiler

OF COURSE, it meets all the Code requirements. The A. S. M. E. and all that sort of thing.

But the real point to you, is that it is BURN-HAM MADE.

You have for years known our cast iron boilers for every place and purpose. You know it is their long fire travel that makes their short fuel bill.

By the same token you know that this Welded Steel Boiler has Burnham dependableness built into it. You know the ratings are right. That it will do what we say it will do.

If you want to know more - the complete more there is our Catalog to which you are welcome.

sizes

The Burnham Welded Steel Boiler is made in 19 sizes, ranging from 1,800 to 42,500 square feet.

Burnham Boiler Corporation

Irvington, New York Zanesville, Ohio

Representatives in All Principal Cities of the United States and Canada

PRODUCTS AND PRACTICE

(Continued from page 102)

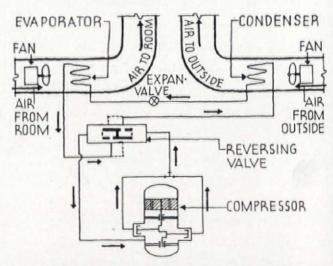
water which evaporates is replenished automatically by a float valve. This make-up water, it is claimed, will amount to only about 1 per cent of the water normally required by an air conditioning system which wastes its water.

403. UNIT AIR CONDITIONER INCLUDES HEATING BY REVERSE REFRIGERATION

A heat pump that cools or heats as desired plus a fan and a filter make up this self-contained De La Vergne unit air conditioner. Set it in a room and it needs only outside air and electric current for its operation. No water and waste connections are required. Normally run as a refrigerator, it cools and partially dehumidifies the air in the room. A turn of a handle and it circulates warm air for cool days or evenings.

Cooling is done on the usual compression refrigerator principle, heating by reverse refrigeration. Paradoxically, heat is extracted from the cooler, outside air and pumped into the warmer room.

These operations are shown diagrammatically below. In the closed refrigerator cycle, the refrigerant, after passing through the compressor is a hot compressed gas. Cooled in the condenser, it becomes a liquid. Forced by the pressure of the gas behind, it passes through the expansion valve into the evaporator where a partial vacuum has been caused by the suction of the compressor. The sudden drop in pressure at the expansion valve causes the liquid to evaporate and in doing so it becomes very cold. After absorbing heat from the air around the evaporator, it is again drawn through the compressor and the cycle is continuously repeated.



For room cooling, the air from the room is drawn by a fan across the evaporator coil where it is cooled and returned to the room. The condenser cooling is accomplished with air from outdoors, which is then exhausted to the outside atmosphere. As the room air is cooled in the evaporator some of its moisture condenses there, passes to the outside air duct and evaporates as it leaves the building.

In order to act as a heater, the passage of the refrigerant after it leaves the compressor is reversed. The evaporator becomes a condenser and the condenser an evaporator, the result being that room air is warmed by the hot gas in what has now become the condenser coil, while the cold air surrounding the new evaporator passes outdoors. This simple machinery, including a filter for cleaning the air in the room, is enclosed in a neat jacket not much larger than a radiator

(Continued on page 106)

For Oak Floors that STAY Well Groomed, Rely on OAK FLOORING GUARANTEED for GRADE



By NOTMA

The copyrighted label below now identifies Oak Flooring guaranteed for Grade. Permission to attach this label to oak flooring products is limited exclusively to those producers comprising membership of the National Oak Flooring Manufacturers Association. To qualify for the use of this label, these members must conform to specified standards in manufacture and grades as endorsed by the National Bureau of Standards of the U.S. Department of Commerce. To safeguard that conformity, NOFMA, in which title to the industry's Grading Rules vests, maintains a staff of field inspectors who supervise manufacturing and grading at members' flooring plants.

NOFMA is the only organization within the industry, authorized to exercise such supervision. Under its sole jurisdiction, therefore, appearance of this label on Oak Flooring bundles, certifies NOFMA Grades according to National Bureau standards, as well as the manifest intention of this group to keep faith with the architectural profession and the ultimate consumer.

NOFMA-Certified Oak Flooring is available through representative distributors anywhere in the United States. For further information and file copies of Standard Grade Specifications, address:



NATIONAL OAK FLOORING MANUFACTURERS ASSOCIATION MEMPHIS, TENNESSEE



PYRAMID Snap-On MOULDINGS for kitchen beauty

The most important room in the home takes on added attraction when trimmed with modern Pyramid SNAP-ON Metal Mouldings.

The Stainless Steel Pryamid SNAP-ON Mouldings used in the kitchen illustrated above will never rust, tarnish, or corrode. Their original brightness may be maintained throughout their life by wiping with a dry cloth. No polish will ever be needed.

In kitchen, bathroom, or living room—wherever modern treatment is desired—Pryamid SNAP-ON Mouldings will serve economically and permanently.

The shapes and sizes are readily adaptable to any truly modern decorative treatment. Finishes are satin or mirror in Stainless Steel, Bronze, Copper, or Brass.

Discriptive folder, showing Pyramid SNAP-ON Mouldings in modern use, with installation details, will be sent upon request. Write for them at once.



THEY Snap-On

Pyramid Snap-On Mouldings are easy and economical to install. First: Tack on track. Second: Hook flange of moulding under one side of track. Third: Snap on the Pyramid Moulding with the finger tips.

PYRAMID METALS COMPANY 457 North Oakley Boulevard, Chicago, Illinois

PRODUCTS AND PRACTICE

(Continued from page 104)

which can be set under a window. If desired, it can be furnished with a coil for connection to a steam or hot water heating system for cold weather heating. A larger unit can be set in the basement or utility room and connected to several rooms by ducts.

404. ELECTRIC HEATER

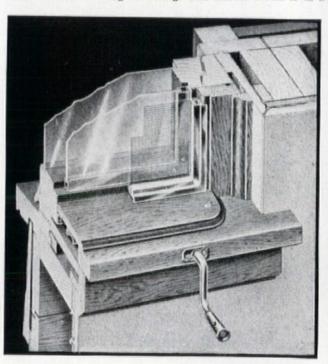


The Wesix Electric Heater Co. makes electric heaters which are designed to combine the advantages of both radiant and convected heat. Warmed air circulates rapidly through the heaters without the use of a fan and radiant heat is thrown out over a wide angle. They are guaranteed not to burn out for five years. The heater illustrated is a portable type made almost entirely of polished aluminum. Some types contain built-in thermo-

stats which automatically turn off the current when the desired room temperature is reached.

405. WINDOW

The Unipak is a complete window unit consisting of frame, trim, double glazed casement sash, weatherstripping, hardware and screen. Frames, sash and trim are wood. The sashes are fitted, weatherstripped and hinged to an inner frame in the factory and are shipped ready to secure to the outer frame without cutting or fitting. The screen which is in a



narrow aluminum frame snaps into place on the inside, the sash being operated by an under-screen operator. The inner glass of the double glazed sash is held by a narrow white metal frame fitted into a rabbet on the inside of the sash and is removable for cleaning. The Unipak is made by the Farley & Loetscher Mfg. Co.

(Continued on page 108)



RU-BER-OID WEATHER PROTECTION Each Product Outstanding in Value!

For 50 years Weather Protection and the name RU-BER-OID have been synonymous.

In the early days RU-BER-OID Weather Protection signified Roll Roofing, Waterproof Sheathings and Preservative Paints. Today there are "IOI" RU-BER-OID Weather Protection Products, including Roofings, Sidings, House Insulation, Wall Panels, Sheathings, Pipe Coverings, Waterproofing Compounds, etc.

Every product bearing the name RU-BER-OID is a proved product. Every product represents the MOST in value your dollar can buy. Fully investigate the complete RU-BER-OID Line. Mail the coupon.

RU-BER-OID

ROOFING AND BUILDING PRODUCTS

RU-BER-OID ARCHITECTURAL PRODUCTS

BUILT-UP ROOFS

ASBESTOS SHINGLES

ASBESTOS SIDINGS

ASPHALT SHINGLES

MINERAL WOOL HOUSE INSULATION

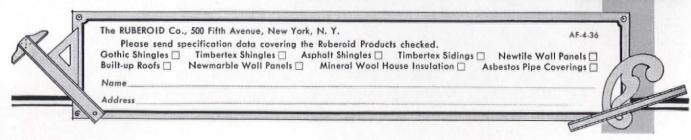
ASBESTOS PIPE COVERINGS

WATERPROOF

SHEATHINGS

NEWTILE

NEWMARBLE

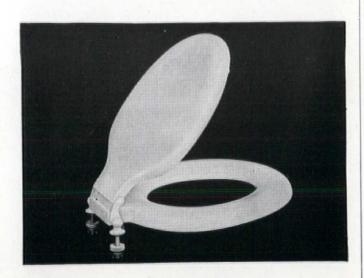


CHURCH

Leadership

25 OF THE 45 SMALL HOMES SHOWN IN THIS ISSUE OF ARCHITECTURAL FORUM SELECTED CHURCH Sani SEATS - AN OUTSTANDING PREFERENCE.

Architects and Builders long have recognized there is no substitute for Church quality, design and workmanship.



CHURCH Sanc' SEATS

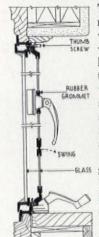
C. F. CHURCH MFG. CO. • HOLYOKE, MASS.

Division of American Radiator & Standard Sanitary Corporation

PRODUCTS AND PRACTICE

(Continued from page 106)

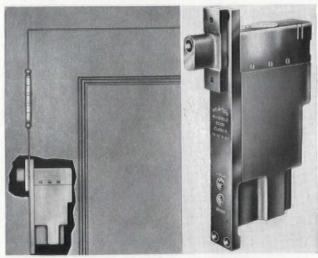
406. DOUBLE WINDOW SASH



The Detroit Steel Products Company have made a special sash to convert their Fenwrought Casement into a double glazed window which materially reduces the heat loss. This sash, which can be applied only to their screened type casement equipped with Roto-Adjusters, fits to the window somewhat in the manner of a screen. The special sash has a light metal frame which is screwed to the window frame and sealed against it by a rubber strip. It has a hole near the center of the glass lined with a rubber grommet through which the window handle fits. With this arrangement, there is an air space one inch wide between inner and outer glass. Ventilation is obtained through a tilt-in sill vent in the lower part of the sash.

407. DOOR CLOSER

A door closer which is completely invisible can be used instead of the usual large and rather unattractive closer. This compact little piece of door hardware, which serves the purpose of door closer and check, is mortised into the stile of the door just below the upper hinge or into the frame. It can be used on either wood or metal doors and permits a full 180°

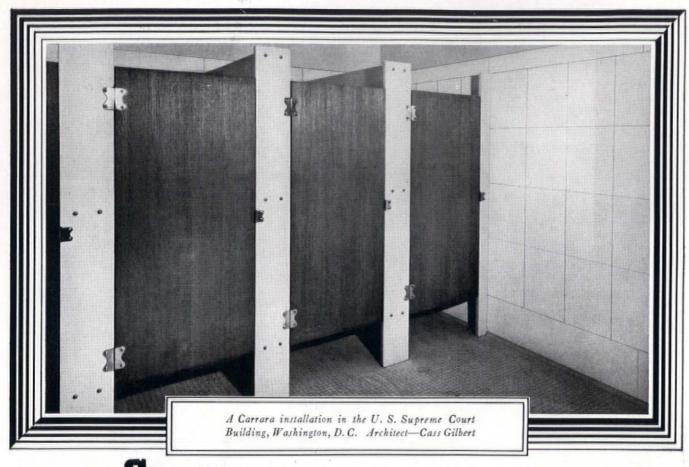


opening. Useful for low screen partitions, single acting gates and other openings where no frame head is available, it is particularly desirable for interior doors when appearance is an important feature. It is made by the Russell & Erwin Manufacturing Co. in several strengths for different size doors but all capacities are interchangeable in the same mortise.

408. INSULATING AND SHEATHING BOARD

A new product manufactured by the Insulite Company is "Bildrite" sheathing. The Insulite Standard Building Board and the Insulite Graylite Building Board have been in use as sheathing materials for the last ten years. This new board consists basically of the same material as the older boards, namely, wood fiber, and it also is an integral sheet, but it is furnished in a thickness of 25/32 of an inch, the thickness of standard types of wood sheathing, which permits its use together with stock mill work. A further improvement is its treatment with a derivative of creosote, which makes it resistant to damage by termites, rot and fungi. This so-called Termilite process is absolutely harmless to human life and is also odorless; it is coincidental with the preparation

(Continued on page 110)





I OILET room walls and partitions of Carrara Structural Glass are easy to keep

clean. An occasional wiping with a damp cloth is all they require to preserve their original brilliance and reflectivity. Since no cleaning powders, no special preparations are necessary, substantial savings in upkeep result.

The other qualities of Carrara deserve your consideration, too. Its unusual good looks, due to its smooth, polished surfaces. Its structural strength. Its imperviousness to moisture, chemicals, oils, pencil marks. Its permanence. Its lasting freedom from checking, crazing, staining, fading. Its positive assurance against the absorption of bathroom odors. Its versatility and adaptability to many different kinds of architectural treatment, which offers you a wide scope for original and effective design.

For new toilet rooms, or for remodeling old ones, Carrara is a material which proves satisfactory in every respect. We invite you to send the coupon below for our illustrated booklet containing complete information.

Listen to the Music You Love, superbly rendered by the Pittsburgh Symphony Orchestra and distinguished guest artists every Thursday at 8.00 P.M., E.S.T., over NBC Blue Network and associated stations.

CARBABA

Paint PITTS BURGH GLASS

Plate GLASS COMPANY GLASS

Pittsburgh Plate Glass Company, 2124-A Grant Bldg., Pittsburgh, Pa.
Please send me, without obligation, your book entitled "Carrara Modern Structural Glass."
Name
Address
CityState

Hotel Saranac saved

\$237100

per year

Mr. Wm. H. Scopes, President of The Hotel Saranac Corporation, Saranac Lake, N. Y., reports: Average annual coal cost \$6,647.00 for four years preceding installation of



Scopes and Feustmann, Architects
Saranac Lake, N. Y.
Tenney and Ohmes, Consulting Engineers
New York, N. Y.

two Detroit Stokers. For two years since Detroit Stokers were installed, the average fuel cost was \$4,276.00 per year. \$2,371.00 per year or 35.7% was saved.

Asheville - Biltmore

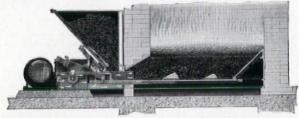


Hotel reduced its coal bill

40%

The annual coal bill of this hotel was reduced from \$1640.00 to \$980.00 . . . saving \$660.00 by the installation of one Detroit LoStoker.

WITH DETROIT LOSTOKERS



Detroit LoStoker, plunger feed, side cleaning, can be automatically controlled from steam pressure, water temperature or room thermostat.

Detroit Stokers not only save money, they also eliminate objectionable smoke... successfully burn all types of coal... and are always dependable. A wide variety of types and sizes are available to suit individual plant requirements for both heat and power.

Write for Bulletin No. 363

DETROIT STOKER COMPANY

Sales Offices and Engineering Department

Fifth Floor, General Motors Building, Detroit, Michigan Works at Monroe, Michigan — District Offices in Principal Cities BUILT IN CANADA AT LONDON, ONTARIO

MODERNIZE AND ECONOMIZE WITH

DETROIT 1898 STOKERS

PRODUCTS AND PRACTICE

(Continued from page 108)

of the wood fibers, thereby providing effective treatment throughout the entire body of the insulation. In its application it becomes insoluble in water.

Bildrite sheathing has a maximum thermal conductivity of 0.360 B.T.U.'s. Tests carried out by the Insulite laboratories show that this new sheathing material is 4½ times as strong as wood sheathing, horizontally applied, and that it has equal bracing strength as compared to the best grades of wood sheathing applied diagonally. Its resistance to air passage is twelve times that of ordinary wood sheathing and when exposed to the most severe moisture conditions it still shows structurally its superiority over the wood sheathed wall.

409. REENFORCING LATH

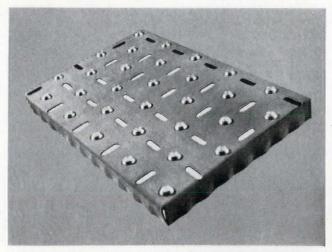
For suspended ceilings, tie-on partitions and all other types of tie-on work, the Reynolds Corp. has developed a new type of reenforcing lath called Reynolds Slotted Ecod Fabric. Used for the first time on the recently completed High School at Calumet, Ill., the new material was found to be an effective time-sayer.

Similar in appearance to the Reynolds Ecod Fabric, the new lath is slotted at regular intervals to permit tying onto ceilings under steel joists, flat slabs, arches or concrete joists. The time saved is increased by using large sheets of the fabric 8 ft. 1½ in. x 31 in. These sheets are sufficiently rigid for one lather to handle yet not so large that two men are required for installation.

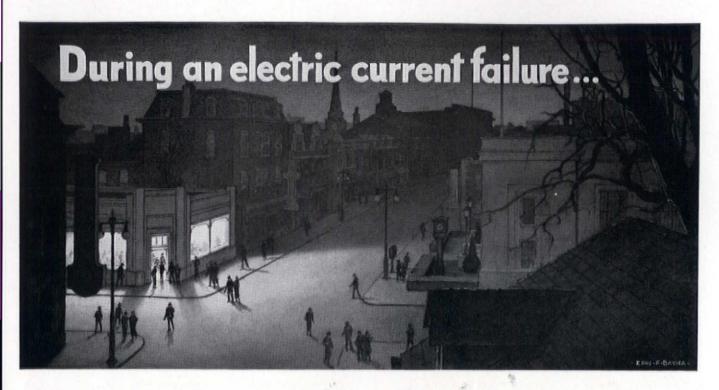
410. ACOUSTICAL PLASTER

Hushkote is the name of a sound absorbing plaster made by the Cleveland Gypsum Co. In spite of its acoustical property, is hard and washable. Applied one half inch thick over the brown coat in much the same way as the ordinary finishing coat, no special skill or treatment is required in its application. It takes on a suede-like texture full of fine pores having a sound absorbing coefficient of .45 at a frequency of 512, and reflects light without glare. It comes in pastel shades and white.

411. STEEL PAVING



Bethlehem Steel Paving is a protective surfacing for concrete floors and paving. The ½ inch thick, rolled steel plates are pushed down onto the surface of freshly laid concrete. Their crimped sides, studs, and the slots which become filled with concrete, anchor them securely. They are made with antiskid studs for thoroughfares such as tunnels and bridges which carry extremely heavy continuous traffic, and are without studs for warehouses, factories, docks and loading platforms where heavy goods are conveyed on small steel-wheeled trucks which are hard on floor surfaces.



This store stayed open and sold candles to the rest of the town

HERE is an actual occurrence that took place in a medium-sized town. The normal electric current supply was interrupted, affecting the entire community. One building only remained lighted—a modern store equipped with an Exide Emergency Lighting Battery System. The architect who had designed the store and specified this installation had reason to congratulate himself on the foresight that protected his client so thoroughly. Following is the operating report on this installation:

Remarks:

"About Feb. 15 the A. C. went off at 5 P. M. and was out for several hours. The store had sufficient lights to keep open and sell candles to the rest of the town. People lined up outside Exide Keepalite

EMERGENCY LIGHTING SYSTEMS

Referto Sweet's Catalog, Sec. 27—Page 11, 1936 Edition

the store asking where the lights came from."

The utility companies take every precaution to prevent interruptions in the service, but they cannot control the effects of street accidents, fires, storms, or blown fuses and short circuits within a building itself.

No building can be considered modern if it is subject to the danger of sudden darkness. An Exide Keepalite Emergency Lighting Battery System operates instantly and automatically upon any interruption in the normal current supply, providing

> abundant light for a single room or an entire building. Why not mail the coupon for complete details?

> THE ELECTRIC STORAGE BATTERY CO.
> Philadelphia

The World's Largest Manufacturers of Storage Batteries for Every Purpose

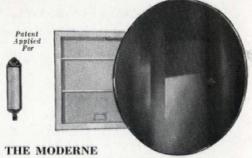
Exide Batteries of Canada, Limited, Toronto

WHAT IS EXIDE EMERGENCY LIGHTING?

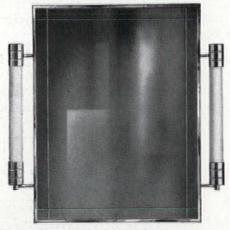
An Exide Keepalite Emergency Lighting Battery System automatically and instantly supplies abundant light, to a single room or an entire building, in case the normal electric current supply fails. It is fully automatic and absolutely dependable.

Mirrors and Accessori

Architects will find in the Miami-Carey line for 1936 many entirely new ideas for bathroom equipment. The latest Miami designs include tinted mirrors, recessed mirrors, side cabinets, indirect lighting and many other features that maintain and enhance Miami leadership in the bathroom cabinet field. The few styles illustrated give but a hint of the complete new line.



A distinctly new Miami creation. Circular mirror forms the door to an all-metal cabinet conrealled in the wall. To all appearances, when closed, it is just a fine circular mirror on the wall. When opened, a clever hinge device swings mirror straight out over washstand. Ideal for shaving, dressing the hair or "making up." Mirror 26 inches in diameter; cabinet, 16 x 16 x 4 in.



MIAMI CABINETS WITH ELECTRIC LIGHTS

The above is but one of many Miami cabinets that can be equipped with the new type of tubular light fixtures illustrated. These lights, of beautiful opal glass, are correctly located to concentrate light on the mirror and at the same time illuminate the entire bathroom, with a soft and subdued light. The light brackets are chromium-plated. These fixtures may be supplied with many types of Miami-Carey Cabinets. Consult the nearest Carey distributor or write direct to factory for details.

See Sweet's Catalog

More than two score styles of Miami-Carey bathroom cabinets, mirrors and accessories, also laundry chute doors, access doors, and built-in ironing boards are shown in Sweet's Architectural Catalog for 1936. The same data is provided in a 24-page catalog which will be sent on request. Write for Bulletin AF.

MIAMI CABINET DIVISION

The Philip Carey Company MIDDLETOWN, OHIO

TECHNICAL PUBLICATIONS

OUR ENEMY THE TERMITE, by Thomas Elliott Snyder, Comstock Publishing Company, Ithaca, New York, 196 pp, illustrated, 9 x 6, \$3.

One does not hope, in reading a book about termites, to find oneself fascinated-loath to lay the book down. But such is the achievement of Thomas E. Snyder. The termite is our enemy, yes, but an interesting creature, one of the oldest inhabitants of the globe and one of the longest lived insects. Queens in artificial colonies are known to have lived for twenty-five years.

Termites live in colonies in a rigidly ordered social life. Mr. Snyder is inclined to the theory that termites have a state bordering on communism but he voices uncertainty as to whether or not their complex social system is set up for the workers or the royalty; and there are castes, three of them.

Though sterile and lowly hewers of wood, the workers probably enact the most important role in the colony. The soldiers, also sterile, act as a police force and as a standing army for defense. These two castes work towards the all important role in the colony, to reproduce many young for the maintenance of the species. Hence, sex is all important and there are special forms, the kings and queens, who do nothing but breed and produce young.

In the U. S., there is just one happy state, South Dakota,* where termites have not been found; why, Mr. Snyder does not know; but elsewhere, contrary to popular belief, they are old inhabitants.

In the good old days they lived for the most part in dead trees, the easiest wood to eat. Came man, disturbing the balance of nature. Came termite to the easiest available diet, including, besides the softer dead wood, shoes, shotgun shells and stamps.

Mr. Snyder has spent twenty-six years with the Bureau of Entomology of the U.S. Department of Agriculture-twentysix years with the Bureau and termites-well, mostly termites. At least he found none of their wood-destroying "sisters, or their cousins or their aunts" a tithe as formidable or as fascinating as "our enemy the termite."

His researches have been toward their control. Elimination is too much to hope for. They antedate man by many years and will probably be here long after he has vanished. His explanations of methods of artificial control include his opinions on their relative effectiveness. Mr. Snyder is not an alarmist but firm in his belief that preventative measures should be part of all new construction work. The book ends with recommended provisions for building codes and specifications for remedying existing damage.

DOUGLAS FIR USE BOOK

This book contains structural data and design tables, grading rules and recommendations and timber connector data. Published by the West Coast Lumbermen's Assn., 364 Stuart Building, Seattle, Wash. Price \$1.

THE 1936 GUIDE OF THE A. S. H. V. E.

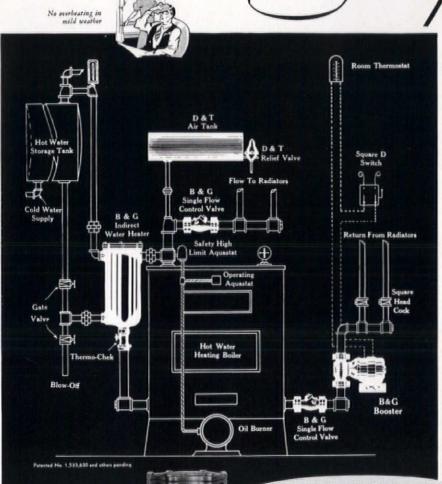
Eight hundred pages of technical data, a catalogue section and a list of members of the society. The technical data section explains fundamentals, states problems and gives solutions. It has been enlarged and revised, particularly the chapters on air drying and on refrigeration for air conditioning. It can be obtained from the American Society of Heating and Ventilating Engineers, 51 Madison Avenue, New York, N. Y. Price \$5.

*We learn that termites have just been discovered in South Dakota.





ALL HEATING COMFORT AND ECONOMY STANDARDS



BY THIS SENSATIONAL ONE-PIPE HOT WATER HEATING SYSTEM

Heats both the House and Domestic Hot Water for less than the usual cost of house heating alone!

For the first time! A completely efficient and practical one-pipe hot water heating plant—the B & G Triple Duty Monoflo System. Costs much less to install . . . much less to operate than any standard two-pipe installation. All made possible by the B & G Monoflo Fitting, a revolutionary device which eliminates short circuiting and assures "balanced" distribution of hot water to every radiator.

Briefly described, the B & G Triple Duty Monoflo System employs mechanical circulation to provide rapid, automatically controlled heat. Summer and winter Domestic Hot Water is supplied by a B & G Indirect Heater, frequently at a saving as great as 75%. So sensitively controlled is this system that fuel consumption follows accurately all weather fluctuations—no over or under-heating. With high temperature water, piping and radiation need be no larger than that required for steam.

These claims of economy, comfort, and dependability are amply substantiated in B & G Triple Duty installations the country over—let us show you the facts.

Complete literature and design data are available upon request. Bell and Gossett Co., 3000 Wallace St., Chicago.

This is the simple equipment used in a B & G Triple Duty Monoflo System.



B&G Triple Duty Heating System

BELL & GOSSETT COMPANY



In laying plans for a heating installation the architect must keep in mind the operating cost of the installation he recommends.

is your problem

WATERFILM BOILERS have proven by both laboratory and actual tests in the homes that it can save up to 50 per cent on fuel costs.

These outstanding facts make WATERFILM BOILERS lead the field:

A FLASH BOILER STABILIZED
HEATS QUICKLY
COOLS SLOWLY
CUTS FUEL COSTS
IS OF WELDED STEEL CONSTRUCTION
BUILT ESPECIALLY FOR AUTOMATIC FIRING
SIMPLE AND INEXPENSIVE TO INSTALL

The jacket is good looking as well as serviceable.

Write today for full information regarding WATERFILM BOILERS

WATERFILM BOILERS, INC.

154 OGDEN AVE., JERSEY CITY, N. J.





BOILER STABILIZED

MANUFACTURERS' PUBLICATIONS

Among the manufacturers publications recently received of interest to the architectural profession were the following:

TERMITES

412. The Wood Preserving Corp.—a pamphlet on prevention of termite damage; extracts from T. E. Snyder's recent book on termites.

413. Tennessee Eastman Corp.—a booklet on wood preservation; how they treat wood against decay and termites.

AIR DUCTS

414. Lamneck Products Inc.—a folder containing a guide chart to aid in selecting duct fittings.

STEAM FITTINGS

415. Bell & Gosset Co.—a handy heating guide for designing forced flow hot water systems, punched to fit almost any $8\frac{1}{2} \times 11$ in. loose-leaf cover; also a bulletin describing their steam fittings and the Mono-Flo system.

ROOFING

416. The Flintkote Co.—almost a book describing Flintkote roofing products and how they are made.

PAINT

417. Sherwin-Williams Co.—a guide to the use of their paints with emphasis on improved lighting by the use of the right paints.

418. Muralo Co., Inc.—a folder full of pamphlets describing their cold water paint products.

KITCHEN EQUIPMENT

419. Crane Co.—a catalogue of kitchen equipment so arranged as to be a guide in kitchen layout work.

SINKS

420. Elkay Manufacturing Co.—catalogue of stainless steel kitchen and pantry sinks, cabinet tops and a few galvanized iron scullery sinks.

WELDING

421. Air Reduction Sales Co.—catalogue No. 101 on welding equipment and supplies.

HARDWARE

422. P. & F. Corbin, Division of The American Hardware Corp.—a catalogue of special hardware for metal cabinets, and a catalogue of checking pivots for dwarf single swing doors and gates.

423. The Donley Brothers Co.—a catalogue of iron hardware devices including everything from fireplace equipment to wheel guards.

424. Norton Door Closer Co.—a catalogue of door closers with detailed information for their application.

425. "Doorways" shows various kinds of doors and the hardware made for them by the Richards-Wilcox Manufacturing Co.

HEATING AND AIR CONDITIONING

426. Borg-Warner—a booklet describing the Norge air conditioning unit; furnace, oil burner, filter, humidifier, and hot water heater, all enclosed in one jacket.

427. Johnson Service Co.—a catalogue describing their automatic temperature and humidity control equipment.

428. Delco Appliance Corp.—a catalogue of boilers, burners and controls.

429. Frigidaire Corp.—a catalogue of their cooling, dehumidifying, circulating and cleaning equipment.

430. Russell Electric Co.—a catalogue of circulating and filtering equipment, unit heaters and controls.

(Continued on page 116)

2

accepted facts about

Air Conditioning

that point to one conclusion

MANY of your clients are planning to provide their businesses with the benefits of summer air conditioning. They will discuss the possibilities with you. Naturally an air conditioning system cannot be demonstrated in advance. Your recommendations must be based on confidence in the manufacturer. Hence it is wise to specify the product of a reliable and experienced authority. Consider these facts:

FIRST FACT:

Summer air conditioning is basically cooling and dehumidifying (taking the excess heat and moisture out of the air).

SECOND FACT:

The accepted method of cooling and dehumidifying is by electric refrigeration.

CONCLUSION:

These simple facts clearly indicate the wisdom of recommending the air conditioning systems of the

organization that represents the most experience in the design, manufacture and application of electric refrigeration equipment.

Delco-Frigidaire Conditioning Corporation, with its General Motors background, is that organization.

Here is convincing proof of this statement:

DESIGN: Direct cooling methods of modern air conditioning are possible because of General Motors refrigeration developments. Chief among these is FREON, a cooling medium so superior that it now is universally used in air conditioning.

MANUFACTURE: General Motors, through its Frigidaire division, is the world's largest builder of refrigeration equipment. This equipment is typical of General Motors' recognized ability in fine precision manufacturing. This skill, directed to air conditioning, produces equipment which does more work for less cost.

APPLICATION: Air conditioning installations, using General Motors products, are numbered by thousands. For years these have met requirements ranging from single rooms and offices to entire hotels and apartment houses. Virtually every type of business and industry has Delco-Frigidaire Conditioning installations.

These important facts point to Delco-Frigidaire Conditioning Corporation as the organization best able to furnish air conditioning for your clients. The installations you specify will be designed and installed by men who are qualified by training and experience to give your clients dependable and economical air conditioning at a minimum cost.

Delco-Frigidaire engineers will welcome opportunities to discuss air conditioning problems with you.



PRODUCTS OF GENERAL MOTORS

DELCO-FRIGIDAIRE CONDITIONING CORPORATION

AIR CONDITIONING DAYTON, OHIO AUTOMATIC HEATING



Now, even with a restricted budget and limited space, the added "livability" and convenience of an extra bath is practical—and easily available, with a Weisway Cabinet Shower. In fact, if space is a chief consideration a Weisway Cabinet Shower provides all needed bathing facilities—for each is complete, with shower-head, valves, waste, soap dish and curtain—a bathroom in itself!

Guaranteed leakproof, Weisway Cabinets, with one piece vitreous porcelain receptor and Foot-Grip, No-Slip floor, are independent units, hence not affected by shrinkage of materials or settling of the building. Easily, quickly installed, without special preparation of walls or floor—in space no larger than an ordinary clothes closet.

In the complete Weisway line there are models suited to every home, from the

FOR THE MASTER BATH

With its gleaming vitreous porcelain walls, smart modern design and leakproof construction the new VP Weisway provides shower bathing facilities entirely suited to the most luxurious home.

The exclusive vitreous porcelain Foot-Grip, No-Slip floor, non-absorbent, sanitary, and equally safe wet or dry, gives surefooted comfort never before attained in shower construction.

Top—ceiling unit—with dome Showerlite, and glass door with chrome trim, available if desired.

bath construction. Ask for it; no obligation.

simplest to the most

luxurious—as well as for hotels, clubs, institutions, boats, industrial buildings. Every

architect should have complete data on this big advance in shower

HENRY WEIS MANUFACTURING CO., INC.
ESTABLISHED 1876
CABINET SHOWER DIVISION, 402 OAK ST., ELKHART, IND.

Cabinet WEISWAY Showers

MANUFACTURERS' PUBLICATIONS

(Continued from page 114)

REGISTERS AND GRILLES

431. Hart & Cooley Manufacturing Co.—a catalogue of the many registers and grilles which this concern makes,

DOORS

432. The Kinnear Manufacturing Co.—a catalogue of rolling doors and their hardware.

LAMP FIXTURES

433. Supplement Section XI-A to Catalogue No. 26 of the Benjamin Electric Mfg. Co. gives complete data on their new 400 watt High Intensity Mercury Vapor Lamp—how it operates, its color composition and its advantages—for various types of interior and exterior illumination. It gives complete description, illustrations, dimensions and list prices on Benjamin lighting fixtures for the High Intensity Mercury Vapor Lamp with tables on illumination calculations applying to the various fixtures, and outlines a method of designing a general lighting system with these fixtures, including design of a combination lighting system consisting of mercury vapor and incandescent lamps.

434. Catalogue No. 870 of The Miller Co. covers their complete line of fixture equipment for the high intensity mercury vapor lamp in combination with ordinary Mazda lamps.

WALLBOARD

435. "Sheetrock in Wood Grained Finishes" contains reproductions of wood finishes on United States Gypsum Company's Sheetrock.

436. "Nu-Wood Interiors for Every Wall and Ceiling" shows many uses of the wallboard made by the Wood Conversion Co.

FANS

437. The Emerson Electric Mfg. Co. Catalogue X1149 lists many fans with illustrations and data for each.

ELECTRIC HEATERS

438. American Foundry Equipment Co.—Book No. 236 describing their Electromode convector type electric heaters—portable, built in and industrial.

PLYWOOD

439. United States Plywood Co., Inc.—38 pages attractively illustrated interesting information about plywood; almost a textbook describing the woods and glues used in its manufacture, their uses, "Micarta," "Armorphy," and the plywood house of the Forest Products Laboratory.

LUMBER

440. Southern Pine Association—an "Architects' Specification Manual for Residences" which contains lumber specifications, construction practice recommendations and information about termite protection, painting and wood preservation.

REQUEST	FOR	DATA
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To obtain any pages, indicate	the number	and send co	upon to THE
ARCHITECTURAL	FORUM, 135	East 42nd St	., New York

NAME			 						 		*		*	
STREET ADD														
CITY AND S	STATE													

Please check here if engaged in Architectural Practice

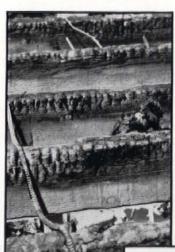
EAGLE INSULATION CHEATS FLAMES

Spectacular roof blaze on East Yonkers Apartment kept from spreading by thick layer of fireproof Eagle Insulation LOSS MINIMIZED!

- When crossed wires under the roof of the Parkway Towers, 210 Bronx River Road, East Yonkers, N. Y., started a spectacular fire last June, more than 75 families fled from their apartments. The whole building seemed doomed to ruin.
- · But the blaze was quickly brought under control. A thick 4-inch blanket of Eagle Insulation, between ceiling beams in all top-floor

ceilings, kept the roaring flames from spreading to the apartments below.

- · The roof was almost completely destroyed, but the top floor ceilings were not even scorched . . . a dramatic demonstration of the fireproof protection that Eagle Insulation gives to apartment buildings and homes.
- · No wonder more and more families are today insisting on insulation-the thick, efficient kind of insulation that Eagle mineral wool provides. This "loose fill" material is easily installed in any type of building by a special pneumatic process . . . keeps homes up to 150 cooler in summer . . . saves up to 40% of fuel bills in winter . . . and is approved by the U.S. Board of Underwriters as being absolutely



how flames were stopped at the point where Eagle Insulation began. (This fireproof mineral wool was scraped back before photograph was taken.)



The Parkway Towers, beautiful East Yonkers apartment building. Eagle Insulation, installed early last spring for the year-round comfort of tenants, actually prevented costly damage a few months later when a roof blaze threatened to sweep the building, Fireproof Eagle mineral wool installed under the roof stopped the fire from spreading to the apartments below.



Actual photograph taken the morning after the Parkway Towers fire, Note complete destruction of the roof. Because the ceiling beams were lined with Eagle Insulation, the fire could not spread to the floors below



Easy to install Eagle Insulation . . .

between ceiling beams and wall studdings. This most efficient of all loose fill insulating wools is quickly installed in all types of buildings at moderate cost by a special pneumatic process. Also available in new convenient bat form. Licensed Eagle Insulation contractors in all large cities.

See Sweet's Catalog for specifications...or mail coupon for complete information.

AGLE INSULATION	See Sweet's Catalog for specificationsor mail coupon for complete information.
AGLE INSULATION	The Eagle-Picher Lead Company, Dept. AF-4, Cincinnati, Ohio. Please send me
or homes and anartments	free samples of Eagle Insulating Mineral Wool also complete specifications.

Made by The Eagle-Picher Lead Company — pioneers in the manufacture of efficient insulating materials.

Name	
Address	Marine Busine French Albert
City	State_



Candid camera catches Harold Mueller, president of L. J. Mueller Furnace Company, Milwaukee, Wisconsin, talking over the 1936 heating outlook with Mr. Hugo Tesch, prominent Milwaukee heating man.

Hi-Hat Heat for Plain Folks

I T'S surprising how much information the public picks up about a subject like automatic heat and air conditioning. With the building industry swinging back into its stride we can expect a greater degree of public interest in home improvements—and experts predict that heating and air conditioning will head the list.

During the dull years just past many great advancements were made. Take for example the new Mueller Air Conditioning Oil Furnace. This unit occupies no more space than an office desk, yet it heats, humidifies, filters and circulates the air within the home. It permits control of winter "climatic" conditions. If desired, cooling and dehumidifying can be added.

This new air conditioner has been pronounced the most beautiful unit on the market. The casing is strikingly styled to the modern note, with green crinkle lacquer, chromium and black

Our contemporaries tell us that this unit will set a new standard for heating equipment. The thousands of new homes to be built this year and next will have the benefit of really modern improvements. Such houses will date a

new era. They will mark a radical departure from old-time standards. Builders are acutely conscious of the fact that the 1936 homes will be vastly superior to those of 1926 standards.



Air-Conditioning Oil Furnace. We are proud of this modern, compact unit which represents the first complete departure from conventional furnace design in a direct-fired forced air heating and air conditioning plant.

Modern heating and air conditioning systems are as far ahead of the old-fashioned furnace or radiator heating plant as those units were ahead of the stove. Surely no 1936 builder will knowingly install heating equipment that is already out of date.

This year Mueller advertising to homebuilders and the building trade tell people to consult their architects. So we should like to give you all the facts about the wonderful new line of Mueller equipment. Send for booklet describing this new air conditioning oil furness and victoring the

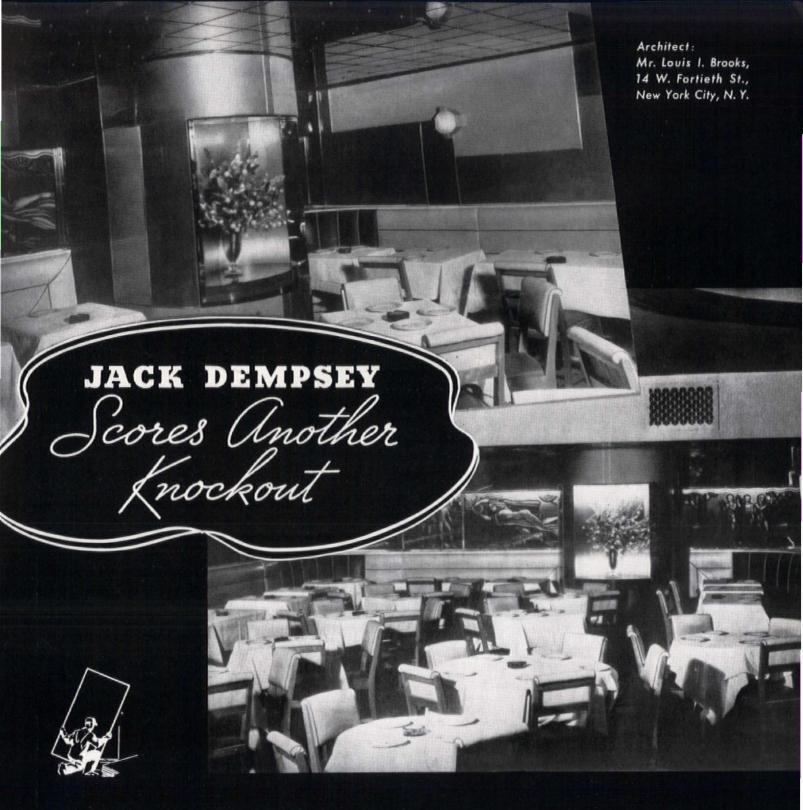
Send for booklet describing this new air conditioning oil furnace and picturing the beautiful, newly styled Climator equipment, Gas Era furnaces and boilers and the standard line of coal fired equipment. We aim to furnish Hi-Hat Heating equip

We aim to furnish Hi-Hat Heating equip ment at plain prices and shall be happy to have your cooperation.

Thank you.

H. Cureller.
PRESIDENT

MUELLER-MILWAUKEE



R. DEMPSEY entertains New Yorkers in one of Gotham's smartest restaurants. This great sportsman is amply demonstrating here his business acumen. He knows his public, New York and elsewhere. He knows that fine foods, perfectly prepared, must be served in interesting surroundings in order to "keep them coming."

Mr. Dempsey found that the smart, tasteful effects he wanted were attainable with various beautiful shades of Marlite. It was the effect that Mr. Dempsey mainly sought—not economy—but the final low cost was a pleasant surprise.

Marlite is our plain, unmarked sheet, supplied in sizes ranging from $4' \times 4'$ up to $4' \times 12'$. It comes in a wide range of rich

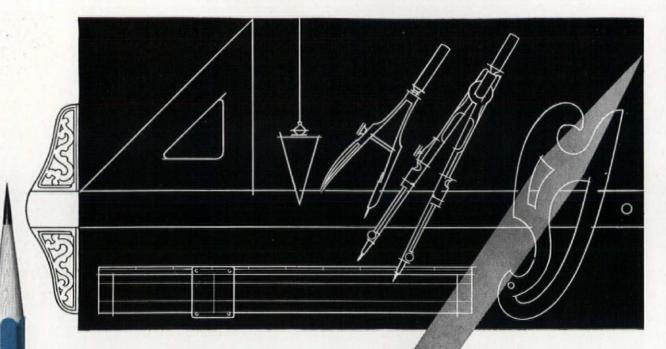
colors and pastel shades, beautifully finished, sanitary and durable. It is cleaned effortlessly with a damp cloth.

Installation is simple and quick. Any good carpenter, working with ordinary carpentry tools, has no difficulty with any Marsh product, applied to old or new walls.

Send for detailed information on Marlite, the plain sheet; Marshtile, the tile-marked sheet; Marshmarble, perfect reproductions of rare marble in color; and Marshwood, reproducing the finest wood surfaces.

MARSH WALL TILE COMPANY • 41 Marsh Place, Dover, Ohio See our display at Shop No. 15 Concourse, R. C. A. Building, New York City

MARSH Wonder Walls



To your other precision instruments you can now add

A PRECISION DRAWING PENCIL

"Chemi-Sealed" TURQUOISE

SCIENTIFIC ACCURACY OF GRADING

In this basically better drawing pencil, the entire range of 17 grades is spaced with scientific accuracy entirely by adjusting the proportions of graphite and clay in 17 different lead formulas. We use wax for smoothness only and never to change the grading of a lead by varying the hardness of the wax. The result is 17 inherently accurate grades, each as true as a plumb line—and "Chemi-Sealed" construction keeps them true indefinitely.

STRONGER POINTS

The "Chemi-Sealed" process, tested for four years in the MIKADO office pencil, first locks the wood fibres at the core of the pencil with a resinous binder into a rigid, nonsplitting sheath for the lead (U. S. Pat. No. 1,854,905). Then there is deposited on the waxed leads an impervious coating which permits a perfect bond of lead to wood (U. S. Pat. No. 1,892,508).

In "Chemi-Sealed" TURQUOISE, lead and wood, inseparably united, combine their strength against point breakage in sharpening and in use.

SMOOTHNESS PERMANENTLY SEALED IN

To make them supremely smooth, TURQUOISE leads are impregnated with a blend of waxes until every microscopic particle has a film of lubricant to glide on. In this pencil alone, none of the wax can seep into the wood—it is sealed in for permanent smoothness by the coating deposited on the lead in the "Chemi-Sealed" process.

WHAT "CHEMI-SEALED" TURQUOISE MEANS TO YOU

Precision grading is an aid to perfect drawings. "Chemi-Sealed" construction ends the annoyance, waste and loss of time from broken points, Sealed in smoothness speeds your work. For personal proof of TURQUOISE quality, write for a free sample in any grade you desire, giving your supplier's name and address, and mentioning this publication.



The broken white line indicates the impervious coating which insures a perfect union of lead to wood.



Heat the point of a TURQUOISE pencil. The shiny film which exudes is proof of the waxes which are sealed in the lead.



"Chemi-Sealed"
IRDUDISE

EAGLE PENCIL COMPANY, 703 EAST 13th ST., NEW YORK CITY

Manufacturers of writing and drawing pencils since 1856

TRANE PRODUCTS FOR AIR CONDITIONING

FLOOR TYPE DeLUXE CABINET UNIT

COMMERCIAL UNITS. LARGE CAPACITY, FLOOR AND SUS-

PENDED TYPE PROPELLOR TYPE UNITS

HOTEL AND OFFICE UNITS

GENERATOR COOL-ERS

RADIO TUBE COOL-ERS

AIR COMPRESSOR INTER COOLERS

PRODUCT COOLERS

EVAPORATIVE CON-DENSERS

RAILWAY UNITS COMPLETE UNITS

UNDER CAR UNITS

OVERHEAD UNITS **EVR CONDENSERS**

OIL COOLERS

AIR WASHERS SPRAY NOZZLES

PROPELLOR

BLOWER

PUMPS

CIRCULATION CONDENSATION

BOILER FEED

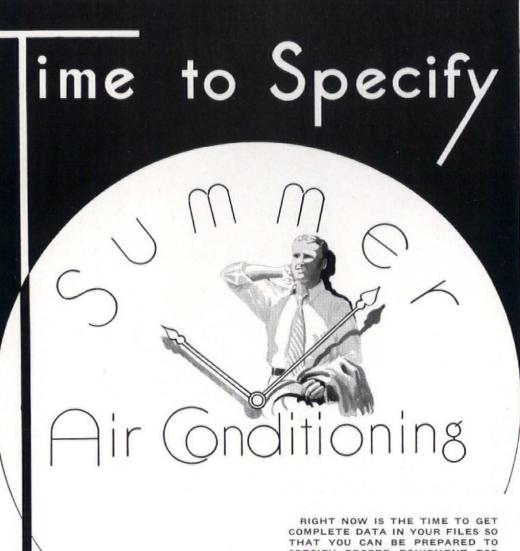
COOLING COILS

WATER COOLING COILS

D. E. COILS

EVAPORATIVE COILS

CONDENSER COILS





THAT YOU CAN BE PREPARED TO SPECIFY PROPER EQUIPMENT FOR THE AIR CONDITIONING JOBS YOU WILL HANDLE THIS SEASON. AND "TRANE" HAS SOMETHING TO OFFER YOU IN THE WAY OF ENGINEERING HELP, COMPREHENSIVE LITER-ATURE, AND AUTHORITATIVE DATA THAT WILL SAVE YOU HUNDREDS OF DOLLARS, MUCH LOST TIME, AND ASSURE YOU OF SATISFIED CLIENTS.

NO MATTER WHAT TYPE JOB YOU HAVE, NO MATTER WHAT APPLICATION, THERE IS "TRANE"
EQUIPMENT TO FIT THE NEED.
STUDY CAREFULLY THE LIST OF AIR
CONDITIONING PRODUCTS IN THE LEFT HAND COLUMN. CHECK THOSE IN WHICH YOU ARE SPECIFICALLY INTERESTED, AND WRITE US AT ONCE FOR YOUR COMPLETE IN-FORMATION.

BUT THE TIME TO DO IT IS NOW-DO NOT WAIT UNTIL THE MIDDLE OF THE SEASON RUSH.

THETRANE

BRANCHES IN ALL PRINCIPAL CITIES AND CANADA

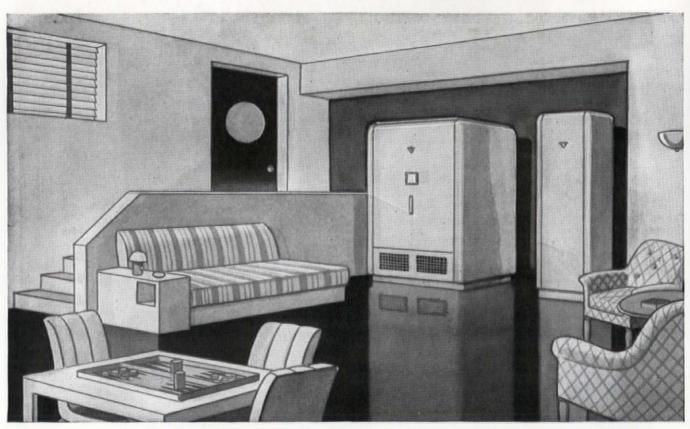
LA CROSSE

WISCONSIN

ALSO MANUFACTURERS OF A COMPLETE LINE OF HEATING SPECIALTIES, CONVECTION HEATERS AND UNIT HEATERS

Small Homes are large inside

when every foot of basement space is usable



No exposed piping takes up space or otherwise mars this modern basement room

AGP GAS HEATING SAVES SPACE, BRINGS AUTOMATIC COMFORT TO MODERN, MODERATELY PRICED HOMES . . .



Not the cubic footage, but the use that's made of it, makes a house really large or small. In the "small home" where space is at a

home" where space is at a premium, AGP Heating with Gas makes every foot of basement space usable.

The "Empire" Ideal gas-fired Boiler by AGP is small and compact. It won't sprout arms or legs on installation to take up useful space... to mar the interior that's designed around it. All piping, including drafthood and header, is inside or behind the lustrous gray enamel steel jacket. It is handsome furniture for any basement room. In addition it brings with it other desirable features: it is completely automatic with the exclusive Thermotor Valve; it is efficient, clean and

economical. No extra space is needed for fuel storage. Gas comes from the main, and is paid for after use. Reduced rates in many localities today make heating with gas especially desirable. For the very small home without a basement, "Empire" Ideal series GAE can be installed on the same floor as the living quarters—even in the living room!

Before you plan, ask your local gas company for figures on cost. And for information on the complete line of AGP equipment for every size of home...for every purse...for every domestic and industrial use. Or write today to

AMERICAN GAS PRODUCTS CORPORATION

Division of AMERICAN RADIATOR COMPANY

40 West 40th Street, New York, N. Y.



WATER HEATING SPECIALISTS

Every requirement for domestic hot water is amply covered in the complete line of AGP automatic gas-fired storage water heaters. Three models, for every home; sizes from 15 to 75 gallons. "Empire" jacket as illustrated at top soon available,

THE "EMPIRE" IDEAL BY AGP

The World's Most Beautiful Gas Boiler

NEW DEVELOPMENTS IN AUTOMATIC GAS HOT WATER SERVICE

The cost of heating water by gas has been materially lowered. New methods of construction have been introduced. More effective installation practice has been developed.

Operation economies ranging from 15% to 42% have resulted where old gas water heaters were replaced by modern automatic gas water heaters, with insulation, thermostatic control, new burner construction, more efficient utilization of heat.

Installation Suggestions That Reduce Gas Water Heating Costs

Locate heater near point of greatest

Use small-size pipe or tubing for hot water lines

Install heat-trap in main hot water line Make direct runs on hot water lines Install self-closing faucets on hot water Use draft diverter in flue (if not part of heater's standard equipment)

Install proper size and type of heater for hot water requirements

Check thermostat for proper setting

Check pilot adjustment for economical performance

For Full Information ask your gas company or any of the undersigned manufacturers to give you the results of Professor Wilkes' exhaustive tests at Massachusetts Institute of Technology

These tests have yielded comparative cost data for various types of heaters using not only gas but other fuels. By applying these data to your local fuel costs, you can readily determine the most economical form of water heater installation to recommend.

GAS WATER HEATER DIVISION

ASSOCIATION OF GAS APPLIANCE AND EQUIPMENT MANUFACTURERS

60 East 42nd Street, New York

AMERICAN GAS PRODUCTS CORPORATION
CLEVELAND HEATER COMPANY
CRANE CO., PREMIER HEATER DIVISION
EVERHOT HEATER COMPANY
GAS AND ELECTRIC HEATER COMPANY
GAS EQUIPMENT COMPANY

GAS EQUIPMENT COMPANY
HANDLEY-BROWN HEATER COMPANY
HOFFMAN GAS & ELECTRIC HEATER COMPANY
HOTSTREAM HEATER COMPANY
HYNES & COX ELECTRIC CORPORATION

LAWSON MANUFACTURING COMPANY
D HEATER COMPANY
D HEATER COMPANY
D HEATER DIVISION
I HEATER COMPANY
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AUTOMATIC GAS HOT WATER SERVICE



COPPER, BRASS and BRONZE



OBSOLESCENCE and neglect have depreciated existing structures to a far greater extent than would have occurred if nonrust metals had been more widely used. For a decade ago, the economy of these rustless, long-lasting metals was first earning widespread recognition in the building field. Today, however, such items as copper or brass water lines, copper sheet metal work, bronze screens, etc., represent minimum standards in terms of sound construction. Now America is building again—this time, let us hope, on a sounder footing through the use of more durable materials.

It will be a fine thing for future homeowners if they have the foresight to avail themselves of competent architectural supervision in the planning and construction of their homes. This is the gospel that must be spread if a repetition of the building depreciation recently witnessed is to be prevented. For, in its prevention, the voice of architects and responsible contractors will go far in determining that materials used in home construction will give the life-time, expense-free service every homebuilder expects.

Shown on this page are several Anaconda Products that bring economy, convenience and security wherever they are installed. All are produced to the exacting specifications which have made the name ANACONDA synonymous with quality in Copper, Brass and Bronze.

2 Kinds of Rustless Anaconda Water Pipe

The American Brass Company makes two kinds of rustless water pipe, either of which will give long, efficient service

with absolute freedom from repair expense due to rust.

Anaconda 85 Red Brass Pipe, containing 18% more copper than the best grades of yellow brass pipe, is the highest quality corrosion-resisting water pipe commercially obtainable. Yet in commonly used sizes it costs but a fraction of a cent more per foot than yellow brass. An installation of Anaconda 85 Red Brass Pipe is, of course, somewhat more expensive than one of rustable pipe. But years of reliable service, during which the

An example of what generally happens when pipes that rust are buried in walls and floors. "Cheap" piping can be costly in the end.

homeowner is free from all water pipe repair expense caused by rust, more than compensates for this difference in price.

Where first costs must be kept down, Anaconda Copper Water Tube for assembly with

Anaconda Solder-Type Fittings, is ideal. Anaconda Copper Tube does not require threading and may, therefore, be made lighter in weight than standard-size pipe. Consequently, an installation of Anaconda Copper Tube costs scarcely any more than piping that rusts.

Brass pipe (left) and rustable pipe (right) after identical service.

THE AMERICAN BRASS COMPANY

General Offices: Waterbury, Connecticut
Offices and Agencies in Principal Cities
In Canada: ANACONDA AMERICAN BRASS LTD.
New Toronto, Ont.

Rust-Expense

Strong, Rustless Everdur Metal

. . . Ideal for Hot Water Storage Tanks

Clean, rust-free hot water indefinitely! This

benefit can be enjoyed by homeowners only when the water tank is made of metal that cannot rust. Then the convenience of hot water can be fully realized—with never a cent for tank repairs and replacements due to rust.

Everdur Metal is ideal for non-rusting tanks. It is a moderately-priced copper alloywhich is not only rust-

less and durable, but as strong as steel. The fact that it may be fabricated and welded by essentially the same procedures used with steel, makes Everdur tanks available at prices which represent unusually sound value.



"Cutaway" view of an automatic gas beater of well-known make, equipped, like many others, with a rustless Everdur storage tank.

anks al Everdur e tank (range . Of virtually ince' construcevery seam is

The Anaconda trade-mark in copper gutters and rain-pipes assures the utmost quality.

Copper sheet metal work is inexpensive, when its longer service and freedom from up-keep costs are taken into consideration. In fact, it is far cheaper in the end than less durable metals.

A Low-Cost Copper Roof

The development of Anaconda Economy 10-oz. Copper Roofing makes available a sturdy, standing-seam sheet copper roof that may be installed according to traditional methods at surprisingly low cost.

Far from deteriorating, the beauty of Anaconda Economy Copper Roofing increases with age and service. Correctly installed, it requires no further attention. Fire-proof and lightning-proof when properly grounded, earning a lower insurance rate and adding to the



Anaconda Economy Copper Roofing installed. The reduced space between seams is more in keeping with the size of residential roofs.

resale value of a house, this durable roofing finds favor with owners wherever it is installed.

Copper Sheet Metal Work Endures



Periodic repair-expense caused by rust invariably follows the installation of rustable sheet metal work.

to cause extensive damage to the interior of the house.

Valleys, gutters and rain-pipes should always be made of copper. Rain water in flood volume severely tests rust-weakened metal. That is why metals that rust usually last only 5 to 8 years, while Anaconda Copperserves a lifetime.

The same is true of flashings. It is most important that the metal used be copper because ferrous flashings will soon rust, admitting water to rot the woodwork and perhaps

OTHER USES FOR COPPER, BRASS AND BRONZE IN THE HOME

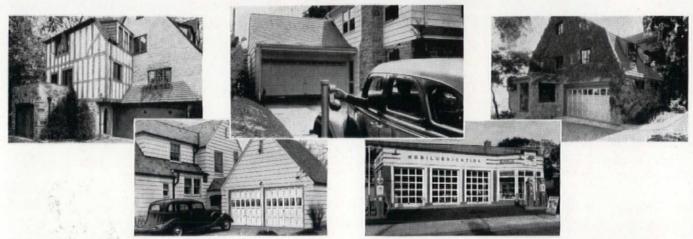
- Screens of Bronze Wire are the most economical to use. Bronze windows, both casement and double-hung, are neat and trim... cannot warp or swell.
- Hardware, lighting fixtures, curtain rods, switch plates, etc., cannot rust, and last indefinitely when made of solid Brass or Bronze.
- Copper radiators require less room and operate more efficiently.
- Anaconda "Electro-Sheet"... thin sheet copper, strong and rustproof... serves as an efficient and low-cost damp-proofing and weather-proofing material.

ANACONDA COPPER & BRASS

NOT THE LAST Consideration. ... BUT AMONG THE First_!



GARAGE - FACTORY WAREHOUSE ALL BUILDING



When building NEW or REMODELING the FIRST CONSIDER-ATION should be the DOOR. It should be TIGHT when closed, YET always EASY TO OPEN. It should not take up any valuable SPACE and it should be LASTING and FREE from future repair as the walls themselves. The "OVERHEAD DOOR" is the ONE DOOR THAT MEETS ALL CONDITIONS.

Mail to:

The NEXT CONSIDERATION—Let US make and install your door. Let US put OUR YEARS of experience in your door. Did you ever stop to think that you use your GARAGE DOOR nearly as often as you do your FRONT DOOR? It must be CONVENIENT—it must be LASTING and have a DISTINCTIVE APPEAL both in CONSTRUCTION and DESIGN. THE "OVERHEAD DOOR" MEETS WITH THESE CONDITIONS.

A NATIONAL ORGANIZATION, established in every State in the Union, has skilled men in every locality making it possible to install an "OVERHEAD DOOR" anywhere, and render you such service that your door will give you a LIFETIME OF SATISFACTION.



No Door too large or too small for our consideration. Made of either wood or steel. If an opening can be filled we can do it.





No Door too large or too small for The "OVERHEAD DOOR" Electric Control. If an opening can be filled we can do it.

AF-436

A MILLION USERS THE BEST RECOMMENDATION

For further information—
See coupon.

MADE IN ANY SIZE FOR ANY OPENING FROM A HANGAR TO A PRIVATE GARAGE
Please send me literature and full information regarding your product. I am interested in doors for the particular purpose as checked.

Name.

Address.

City.

State.

State.

CILIP THIS COUPON COUNTS

PRIVATE GARAGE
PUBLIC GARAGE
WARREHOUSE
FILLING STATION
HANGAR
WOOD DOORS
STEEL DOORS
FACTORY DOORS
OTHER BUILDINGS.
ELECTRIC CONTROLS.

OVERHEAD DOOR CORPORATION . HARTFORD CITY, INDIANA U.S.A.

OVERHEAD DOOR CORPORATION, Hartford City, Indiana, U. S. A.

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this improved

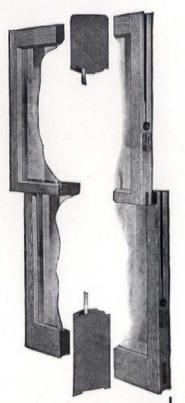
STOCK WINDOW

ARCHITECTS CONTRACTORS BUILDERS Reduce The Cost of Building a Home

You can use this improved wood window in any standard frame—no dressing, reworking or fitting is required on the job.

Chemically treated and factory fitted, guaranteed for twenty-five years against rot.

Yet with all these advantages it costs less installed than any ordinary window. All parts are of soft-textured Pine, and are chemically treated after they are machined, but before being assembled. Pores of the wood at vulnerable points (end-cuts and joints) are thereby sealed, thus preventing fungus growth, rot, and decay.



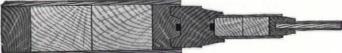
RED-E-FIT ROT-PROOF

Wood windows add charm and beauty to the home.
They have all the advantages and none of the faults of metal sash.

—they come ready to set in the frame—no fitting required—they will not rust, warp, twist or rot—heat and cold are not at-

twist or rot -heat and cold are not at-tracted to wood—therefore, they are warmer than metal in winter and cooler in

Guaranteed "Waterproof Glued" Doors



Here is another Huttig improved wood product. It's a moisture-proof door. An inexpensive charming pattern, suitable for homes, apartments,

Made of soft-textured Pine, with your choice of Fir, Gum, Birch, or Pine panel. Also very smart in veneered Unselected Birch or Gum, or in Plain Oak, or Brown Ash.

- Extra deep plow strengthens panel in insert frame.
- Insert built up of Genuine Water-proof Glued Construction.
- Solid mould does away with loose parts and nail holes.
- Metal splines securely hold all mitred joints in place.
- Huttig Genuine Waterproof Glued Doors are Guaranteed





Dovetailed Putty Lock Locks the putty into the wood

The only stock window with all these special features

Try It - Note These Features

- Beveled edges on the stiles
- The dovetailed putty lock
- Shaped at bottom for sill
- Rabbeted check rails
- Check rails already cut back for parting bead
- Ploughed and bored for weights and cord
- It will reduce installation costs 25 to 50c per window
- When glazed at the factory, furnished with Libbey-Owens-Ford quality glass

Provide Quality at Low Cost

Specify Huttig-of-Muscatine "RED-E-FIT ROT-PROOF" WINDOWS and DUPLEX DOORS. Sold through Jobber Dealer channels everywhere East of the Rockies.

Made only by

G MFG. CO., A Muscatine, Iowa Not connected in any way with firm of similar name located elsewhere. **HUTTIG MFG.**



Sold through the local

lumber dealer-the HUTTIG

ED-E-FIT

OT-PROOF

WINDOW

Is electrically branded

on the edges to identify

the genuine

Duplex Design

LETTERS

(Continued from page 10)

the home owner was dispossessed because he had been sold a home that he hadn't a Chinaman's chance of keeping when hard times came along. Had the individual been paying for a \$3,000 or \$4,000 home instead of twice that much the foreclosure picture of the past few years would have been far less disheartening.

There is much the architect can do to prevent a recurrence of this situation and the recognition will be great for the truly creative. Let him show us something real in a small home; not a wild-eyed modernistic nightmare that no self-respecting American would so much as look at, but a low priced home that has character, comfort and permanence.

A group that can do still more than the architect towards solving this problem is the loaning institutions . . . it is possible to build a good livable home for \$2,500 less gimcracks and many features that should properly be found only in a home costing twice as much or more. But at this point the loaning institutions set up certain obstacles. We may feel that in order to get a home of our own we should eliminate as many items as possible (without weakening construction) temporarily, in the hope that when and if income warrants, they will be gradually added. We are told, it can be done but that the amount of the mort-

gage loan will be contracted further than the proposed saving. The reason given is, largely, that the expansion home is not a complete home and therefore not readily salable should foreclosure become necessary.

This philosophy of the bankers has been in vogue for many years in determining mortgage loan policy. I am wondering if the foreclosure record of recent years may not be pointing out a fundamental weakness in that policy. I am inclined to think that had the home buyer been helped rather than hindered in purchasing an expansion (or incomplete home, if you will) at a price that he could really afford to pay that there would not have been anywhere near as many foreclosures, and the bogy of the loaning institutions, lack of resalability, no longer a problem at all.

Likewise, the FHA standards, estimable as they may be in putting some rules into the game, certainly do not aid in solving the small home problem. In the broad sense small home and low cost homes are the same. Low cost homes mean just exactly what their name states and there can be no important progress along these lines until a new philosophy in terms of mortgage financing is evolved.

Detroit, Mich.

F. F. HANNAN

Louisville Likes . . .

Forum:

. . . Most of the houses we are building now or have built in the past few years are in the less than \$10,000 price range, while nine out of ten inquiries we get are for \$5,000 houses, so we heartily agree with you that that market offers both unlimited opportunity and a very difficult problem. We have been trying for several years to find the solution.

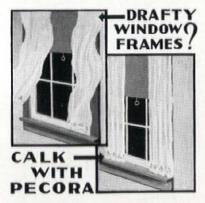
The demand here in Louisville is for a house with entrance hall, living room, dining room, kitchen, breakfast room, if possible, two or three bedrooms and bath. If the house is two story, a first floor lavatory is desired. A one car garage must be included. Colonial design is popular and the exterior must be brick veneer. Modern design is taboo. One or two Regency houses built here are generally disliked by the public.

Our statement of the Louisville demand brings us to the conclusion that while the problem is nationwide, its solution must necessarily be varied to fit the demands, tastes, climatic conditions and living customs of various sections of the country. The East may forego dining rooms while the South will not, just as certain sections of the South can dispense with heating plants, while the North cannot. A \$5,000 southern California house will not suit and is not adaptable to Louisville. . . .

. . . I think it is unfair to the building industry to compare its completed merchandise with the automobile, or any other factory produced article. If the local garage man were called upon to build an

(Continued on page 130)

DRAFTY



Pecora Calking Compound is a plastic material that forms a perfect lasting seal between all building materials either similar or dissimilar. Properly applied, it will not dry out, crack or chip. It makes every joint a watertight expansion joint.



LOW COST RESIDENCES Can be made WEATHER-TIGHT at LOW COST

Be Sure To Calk All Door And Window Frames With



No matter how little an architecturally designed residence costs, it is not unreasonable to expect it to be weather-tight, Greatly improved calking methods make it possible to quickly and economically calk around window and door frames to prevent the infiltration of air currents and moisture. This will also assure a saving in fuel by reducing heat losses and helping to maintain more comfortable room temperatures.

For further details see Sweet's or write direct to us.

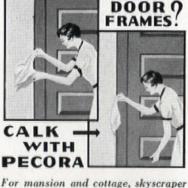
Pecora Paint Company, Inc.

4th & Venango Streets PHILA

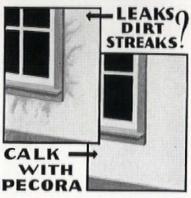
Established 1862 by Smith Bowes

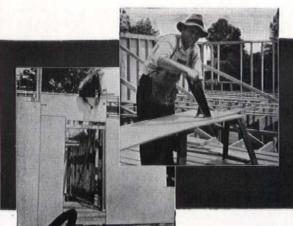
PHILADELPHIA

SASH PUTTIES Also SUCTION MASTIC MORTAR STAINS Makers of for Structural Glass



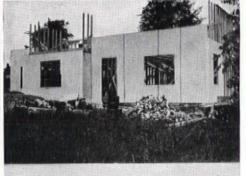
For mansion and cottage, skyscraper and store, in fact in every type of structure where weather-tight protection is desired, Pecora Calking Compound is the popular choice of reliable architects, builders and operators because of its established merit.



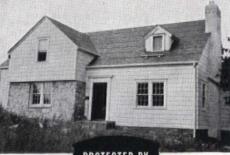


BILDRITE SHEATHING

lowers Application Costs







PROTECTED BY TERMILITE PROCESS

All Insulite products are treated against termites, rot and fungi. Insist on this seal of protection.

BILDRITE Sheathing can be applied much faster affording a time saving of at least one-third as compared with horizontal wood sheathing. A still greater saving is possible in comparing its application time with that of diagonal wood sheathing. And-you get greater bracing strength. Nailing marks assure faster and correct nailing. Bildrite Sheathing is applied with a minimum of waste-still another saving that furthers low application costs-provides more house for the money.

IN ADDITION

Bildrite Sheathing Offers These Advantages:

- 1. Four times the bracing strength of 8-inch ship-lap.
- 2. Far more insulation than average lumber.
- 3. No open joints or knotholes.
- 4. Moderately priced.

INSULITE

The Original Wood-Fiber Insulating Board

THE INSULITE COMPANY, Dept. AF26 Builders Exchange Building, Minneapolis, Minn. Please send me sample and information on Insulite Bildrite Sheathing.

Street Address...

IN EVERY ADVERTISEMENT TO PROSPECTIVE BUILDERS OR MODERNIZERS WE SAY . . . "IT WILL PAY YOU TO SEE AN ARCHITECT WHEN YOU BUILD OR REMODEL"

LETTERS

(Continued from page 128)

automobile from pieces and parts that he purchased here and there and had to contract with others to install the wiring, the carburetor, the upholstery, the tires, the painting, the glazing, etc., and build the car on any open lot under all kinds of weather conditions and above all make it conform to Mrs. Jones' ideas, the resultant auto would no doubt be a grand and costly mess. But that's the real comparison and viewed thus, I venture to say that the building industry is much more efficient and gives more for the money than the automobile industry would if it had to operate in the same manner that the building industry does. . . .

that design, which embraces planning, choice and uses of materials, and manner and methods of construction, does not alone hold the key to the solution. The more we analyze the problem and seek the answer the more we feel that the present methods of distribution of materials must be taken into consideration.

We believe there is something wrong when an article costs the consumer four or five times its factory price. Too much cost is added for transportation, distributors, jobbers, dealers, agents and salesmen. It seems to us that this is an all important part of the problem and one that the manufacturers must solve.

We believe, also, that certain parts or units of the house can and must be standardized and built in factories but in such manner as not to restrict freedom of planning and individuality of design. Beyond this standardization of units and construction methods, we do not believe the buying and building public will let us go.

Talk as we please about the New Age and Functionalism, Modernism and Planned Economy, the home, unlike the auto is tied to the past and traditions and family ties and family trees and with the exception of a few ultra-sophisticates most of us still harbor sentiment in our hearts for our homes and the homes of our grandmothers and as long as we do we'll conjure up visions of little white houses with green blinds and open fireplaces and garden fences and pies on the pantry shelf. . . .

about to enter into a building "boom," we will be confronted with increased costs of labor and materials so that any solution we may work out today for the building of a \$5,000 house will be knocked into a cocked hat. . . .

... Always, even during the palmiest days of the pre-New Deal Era, the cry was for more house for less money, so the problem today is no different than it was then. Only the scale of costs, prices and clients' pocket-books has changed. The depression, or the Republicans, brought the \$10,000 houses down to \$6,000 or \$7,000. Unfortunately, it or they brought pocket-books down still lower. . . .

. . . We believe that the solution lies not in factory built houses, but in factory built, standardized units, the standardization of construction methods and better and less expensive distribution of materials. All architects and builders are alive to the problem and are doing their utmost to develop economical plans, designs, details and construction methods within the limits imposed on them by the whims, desires and dictates of Mr. and Mrs. Owner. . . .

Louisville, Ky.

W. EARLE OTIS

Experience Wanted

Forum:

A University of New Hampshire graduate, '35, with a B.S. degree and four years of training in architecture desires experience from apprenticeship in an office. Any location and a bare subsistence wage would be welcome.

For further information please write Randolph, Me. RALPH ERSKINE, JR.

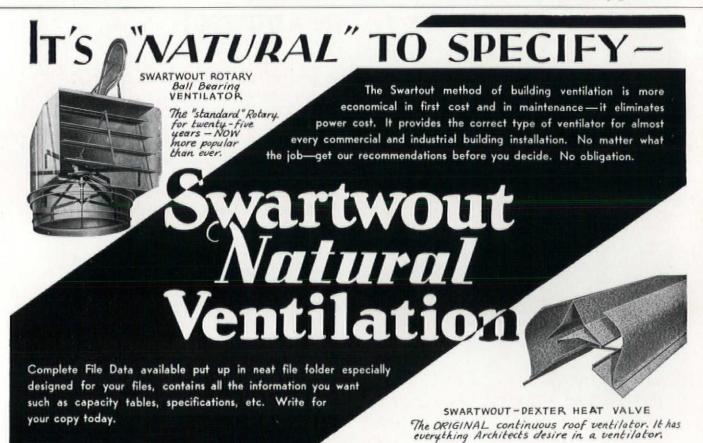
N. Y.'s Fair

Forum:

Central idea for New York World's Fair:
Why not a governmental idea, a justice idea, a consideration for others idea, a liberty without license idea, showing how people can live together in harmony (and how they can kill each other and themselves).

Curtis J. Beard

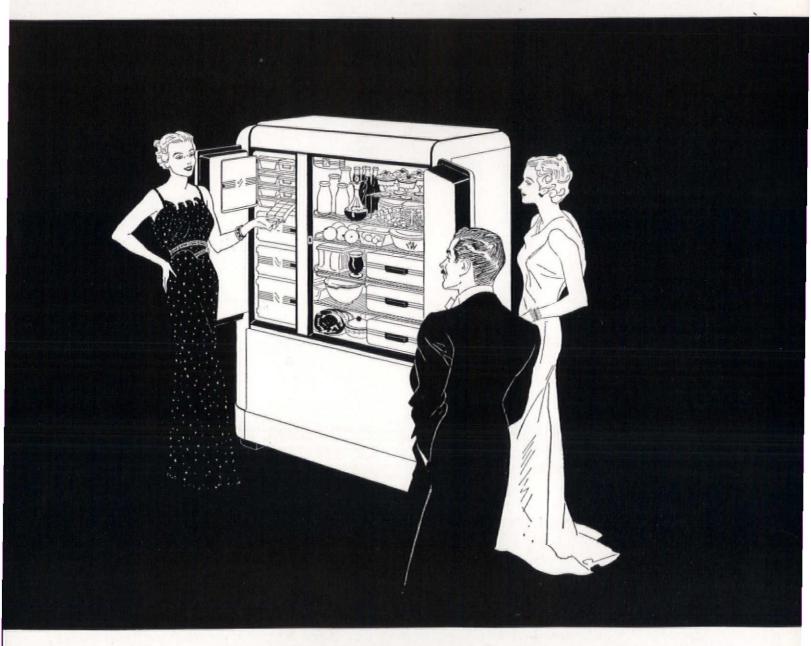
New York, N. Y. (Continued on page 132)



THE SWARTWOUT COMPANY, 18617 Euclid Ave.,

CLEVELAND, OHIO

Big things have happened in refrigeration or the modern home and apartment



, a new standard has been set in refrigerator ment for the well-planned modern kitchen. h the aid of modern discoveries, Kelvinator eated a refrigerator so far in advance of former rds, so much more complete in its service, that ns of former refrigerators have become, by irison, inefficient, wasteful, old-fashioned and

are the reasons.

ble Cold: Delicate automatic controls mainleal temperatures always—and a Built-In Therter shows at any kitchen temperature, that food surely, safely, dependably cold. Visible Economy: Whoever pays the bills for electric current will have advance assurance that current consumption is amazingly low, because, with each new Kelvinator DeLuxe, comes a Certificate of Low Cost of Operation.

Visible Protection: Dependability is backed by the manufacturer's written and signed 5-Year Protection Plan.

Interior Atmosphere Control: The new Kelvinator DeLuxe removes food odors from the air in the cabinet, purifies it, moistens it to ideal humidity—and circulates it.

Defrosting: In the 1936 Kelvinator DeLuxe, de-

frosting is an entirely automatic operation.

Ice Trays: This refrigerator supplies more than an ordinary quota of ice trays that cannot stick, and in every tray is a flexible rubber grid.

Design: This new Kelvinator DeLuxe was designed with the aid of Count Alexis de Sakhnoffsky.

These are a few of the features. When you consider kitchen equipment, before you install or recommend a refrigerator for your beautiful, modern job see the new Kelvinator DeLuxe.

Kelvinator Corporation, Detroit, Michigan . . . Factories also in London, Ontario, and London, England-

"Kelvinator De Luxe

BUILT FOR CONNOISSEURS OF REFRIGERATION

LETTERS

(Continued from page 130)

N. Y.'s Fair (Cont.)

Forum:

In reply to your solicitation for "the idea" for the New York Fair of 1939, may I suggest that there is but one good reason or excuse, these days, for having a Fair, and that is to exhibit Beauty to eyes rapidly being hypnotized by the Beast.

Whatever may be said in favor of Fairs, none has ever had any lasting esthetic worth. The loveliest of them all, "The White City," built in Chicago in 1893, in honor of Christopher Columbus, inspired a brief Renaissance in American art. But in that respect it was fleeting and its value lay more in what it destroyed than in what it created. It sounded the death knell of turrets, bustles, and iron deers. It denoted the passing of the antimacassar, the whatnot, and the brown stone stoop. Yet what have we in their place today? These outcasts of the late Victorian age were no less appalling than the atrocities now parading as "Modern Art."

The New York Fair proposes to honor George Washington. What could be fairer than to let it take the form of a revival of Beauty and Good Taste? For example, a "Georgian" Renaissance. A graceful tribute to the culture of the two Georges—Hanover and Washington—combining the best features of both. Better seek inspiration

there than in the rejected studies of the masters. Thrown by them into the trash cans, centuries ago, these sketches discarded as unworthy, have lately been raked out by hungry seekers of easy money and cheap notoriety, fumigated, refurbished, and sold to a gullible public as something new and beautiful!

Let's bar from this Fair the foolish fashions and clumsy customs to which the first third of the Twentieth Century has made us slaves.

Let's keep out the utterly needless and abominable things that are being manufactured for the sole purpose of selling them, outright or on the vicious installment plan, to a pathetically credulous people.

Let's put up the bars against the high pressure salesmen employed to overcome the reticence of those whose common sense tells them not to buy these gewgaws.

Let's have a Fair dedicated to Beauty—
a place in which to relax and where, for a
brief moment, undisturbed by the noisy
buglers of the Future, we may look once
again upon the loveliness of the Past. And
perhaps cull from it some significant truths,
and ask ourselves some pertinent questions.

For are we, the people, any happier, today, with our automobiles and radios and motion pictures and tabloid papers and skyscrapers; with our subways and submarines, our airplanes and poison gas; with our stores, offices, flats, and dwellings crammed with annoying gadgets and ostentatious gimeracks? Has Progress brought

the people a proportionate increase in Happiness?

Let's have a Fair that will invite a saner life, that will emphasize the importance of discrimination and balance, of refinement and good taste. Let's have a Fair that is truly fair—and not a racket. Give us Beauty to look upon and not a bestial nightmare of raucous colors and vulgar shapes. Otherwise let it be as ugly, sordid, and repulsive as possible, so that it may surely be as you suggest—a Fair to end all Fairs.

OSWALD C. HERING

New York, N. Y.

Thorough-Going

Forum:

... I should like to take this opportunity to compliment The Architectural Forum on its splendid investigation and presentation of the most timely and significant phases of current architectural advancement. The amount of both graphic and written information set forth in the October and December numbers, and now most recently in the small house analysis of the January number, puts the lay public and particularly the profession very deeply in the debt of The Forum, I feel. My congratulations and best wishes for carrying on its high caliber of work.

JOHN F. FITCHEN, III

Dept. of Fine Arts Colgate University Hamilton, N. Y.





L.&C. HARDTMUTH Nº 4082



OUR NEW GALOLITH HOLDER NO 4082

IN ORDER to meet a definite demand, we have developed this sturdy, practical holder to accommodate the large leads shown below. Pressure on the end button

releases the lead. This holder is finished in galolith, with plated tip and band. It sells for \$1.00. We have a cheaperholder (UNIVERSAL HOLDER Nº 48) for 504.

LEADS FOR HOLDERS No. 4082 and 48

GRAPHITE LEAD L. & C. HARDTMUTH CZECHOSLOVAKIA Nº 2018

BLACK GRAPHITE LEADS (Nº 2018) in degrees 2B, 4B, 6B. Each 54 . Box of 6, 304.

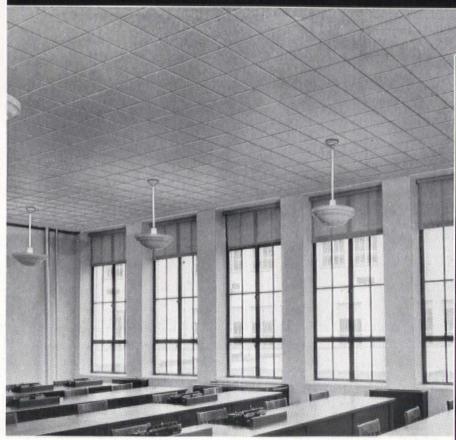
NEGRO LEAD L.&C, HARDTMUTH CZECHOSLOVAKIA Nº 2610

NEGRO LEADS (Nº 2610) in degrees Nº 1 (soft) and Nº 2 (medium) . Each 54 . Box of 6, 304.

ADDITIONAL LEADS are Sanquine (Nº 2620), Artificial Charcoal (Nº 2625), Roman Sepia (Nº 2632) and Cold Sepia (Nº 2633) Artificial Charcoal is in degrees 1,2 and 3; the others in one degree only • All these popular leads are 5¢ each, or 30¢ for a box of six.

KOH-I-NOOR PENCIL CO-INC

IN THE NEW JAMESTOWN HIGH SCHOOL CORKOUSTIC improves appearance...quiets noise



Typewriter room in the Jamestown (N. Y.) High School, Quiet is assured by a ceiling of Armstrong's Corkoustic.

Architects Beck and Tinkham employed 50,000 sq. ft. of Corkoustic in various parts of this building. General contractor: John W. Cowper Co., Buffalo.

AN acoustical material that provides high sound absorption without loss of decorative properties was required by Architects Beck and Tinkham for use in the new Jamestown High School. As a result, they chose Armstrong's Corkoustic for ceilings of the typewriter rooms, music rooms, reading rooms, offices, and gymnasium.

Corkoustic is exceptionally decorative. Made of sound-absorbing particles of cork, it possesses a pleasing texture that resembles travertine. Monotonous uniformity of surface is eliminated because no two tiles are exactly alike. At the same time, Corkoustic's efficiency of 62% at 512 cycles qualifies it as the ideal acoustical material for schools, hospitals, offices, restaurants, theatres, churches, swimming pools, and gymnasiums.

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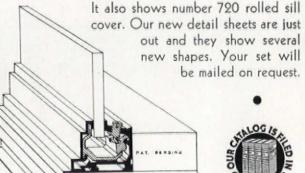
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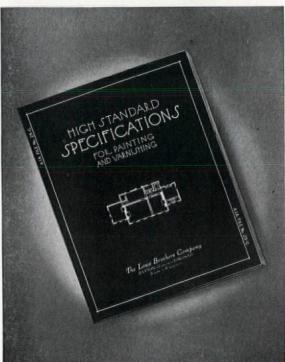
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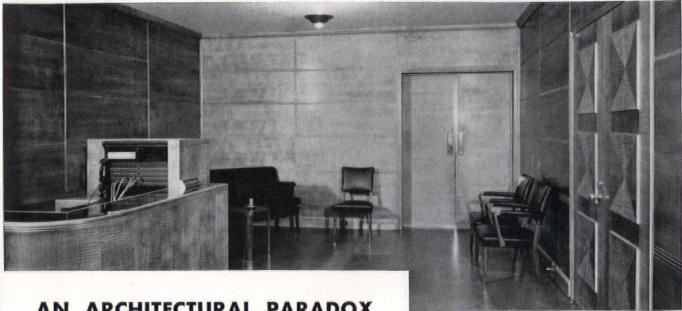
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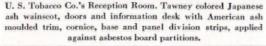
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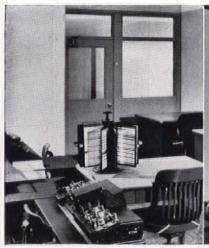
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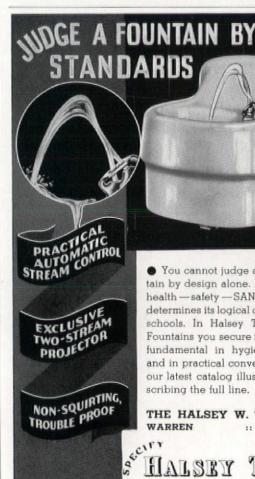


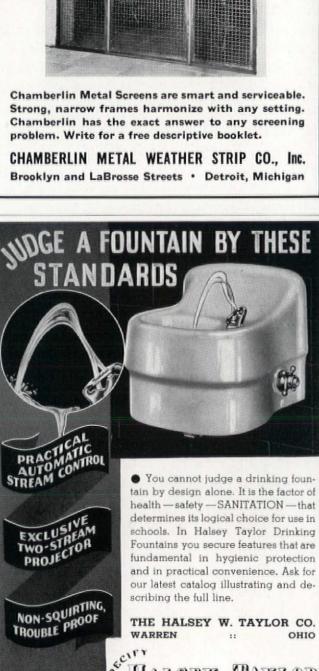
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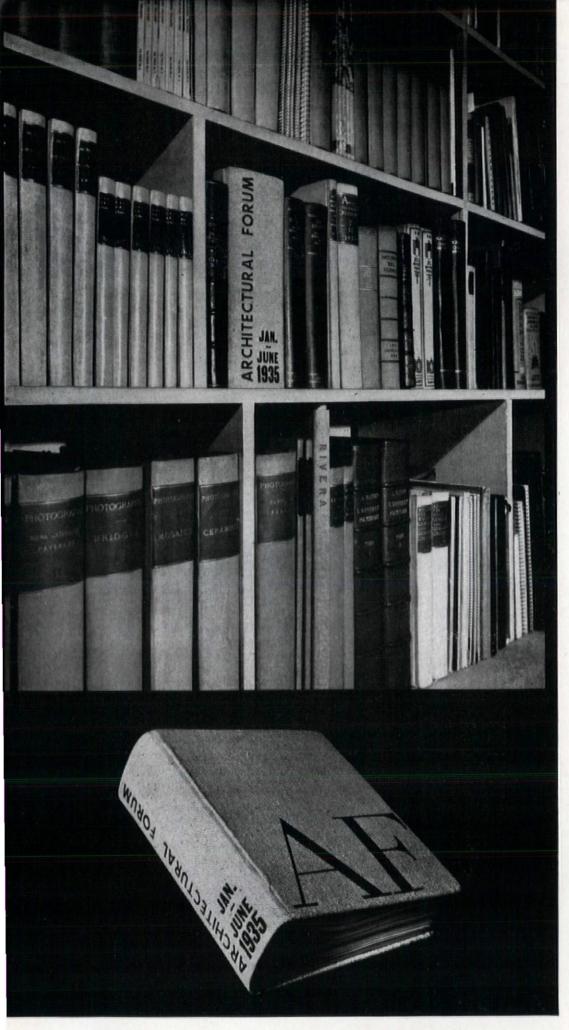
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DECISION OF THE NEW YORK STATE COURT OF APPEALS

in the case of New York City Housing Authority vs. Andrew Muller, et al., March 17, 1935, justifying condemnation of land by State, county and city Housing Authorities. (Also see page 4).

The petitioner, a public corporation organized under the Municipal Housing Authorities Law (Laws of 1934, Chapter 4, comprising Sections 60 to 78, inclusive, of the State Housing Law, being Laws of 1926, Chapter 823), seeks to condemn certain premises in the City of New York owned by the defendant, Andrew Muller, the public use for which the premises are required is stated in the petition to be:

"The clearance, replanning and reconstruction of part of an area of the City of New York, State of New York, wherein there exist, and the petitioner has found to exist, unsanitary and substandard housing conditions."

As part of its project the petitioner has acquired by purchase properties contiguous on both sides of the premises in question. Acquisition of the defendant's property is therefore necessary for the carrying out of the project. The premises consist of two old-law tenement houses. The owner resists condemnation upon the ground that the Municipal Housing Authorities Law violates Article 1, Section 6, of the State Constitution and the Fourteenth Amendment of the Federal Constitution, because it grants to petitioner the power of eminent domain for a use which is not a public use.

Briefly and broadly stated, the statute provides that a city may set up an authority with power to investigate and study living and housing conditions in the city, and to plan and carry out projects for the clearing, replanning and reconstruction of slum areas and the providing of housing accommodations for persons of low income at a monthly rental, the maximum of which shall be \$12.50 per room.*

Bond Issues. It is empowered under certain limitations to issue and sell bonds, which, however, shall not be a debt of the State nor of the city; and it may not in any manner pledge the credit of the State or city or impose upon either any obligation. It is granted the power of eminent domain, to be exercised as provided, and it is exempted from the payment of certain taxes and fees.

In enacting the statute, the Legislature, after thorough investigation, made certain findings of fact, upon the basis of which it determined and declared the necessity in the public interest of the provisions enacted and that the objects thereof were "public uses and purposes for which public moneys may be spent and private property acquired." (Section 61.)

The facts found were that "in certain areas of cities in the State there exist unsanitary and substandard living conditions owing to overcrowding and concentration of population, improper planning, exces-

*The Court errs. There is no limit set on what rentals shall be charged by the New York City Housing Authority.

sive land coverage, lack of proper light, air and space, unsanitary design and arrangement, or lack of proper sanitary facilities; that there is not an adequate supply of decent, safe and sanitary dwelling accommodations for persons of low income, and these conditions cause an increase and spread of disease and crime and constitute a menace to the health, safety, morals, welfare and comfort of the citizens of the State, and impair economic values; that these conditions cannot be remedied by the ordinary operation of private enterprise."

It is true that the legislative findings and the determination of public use are not conclusive on the courts. (Pocantico Water Works v. Bird, 130 N. Y. 249). But they are entitled at least to great respect, since they relate to public conditions concerning which the Legislature both by necessity and duty must have known. (Block 4 Hirsch, 256 U. S., 135, People v. Charles Schweinler Press, 214 N. Y., 395.)

The existence of all the conditions adverted to by the Legislature was alleged in the petition and proved with reference to the area included in the project, of which the premises in question are a part.

The public evils, social and economic, of such conditions are unquestioned and unquestionable. Slum areas are the breeding places of disease which take toll not only from denizens but, by spread, from the inhabitants of the entire city and State.

Juvenile delinquency, crime and immorality are there born, find protection and flourish.

Enormous economic loss results directly from the necessary expenditure of public funds to maintain health and hospital services for afflicted slum dwellers and to war against crime and immorality.

Indirectly, there is an equally heavy capital loss and a diminishing return in taxes because of the areas blighted by the existence of the slums.

Jurisdiction. Concededly, these are matters of State concern (Adler v. Deegan, 251 N. Y. 467, 77), since they vitally affect the health, safety and welfare of the public.

Time and again, in familiar cases needing no citation, the use by the Legislature of the power of taxation and of the police power in dealing with the evils of the slums has been upheld by the courts.

Now, in continuation of a battle, which, if not entirely lost, is far from won, the Legislature has restored to the last of the trinity of sovereign powers by giving to a city agency the power of eminent domain. We are called upon to say whether under the facts of this case, including the circumstances of time and place, the use of the power is a use for the public benefit—a public use—within the law.

There is no case in this jurisdiction or elsewhere directly in point. Governmental housing projects constitute a comparatively new means of remedying an ancient evil. Phases of the general subject were before the courts in Green v. Frazier, 44 N. Dakota, 395; Affd. 253 U. S. 233, and in Willmon v. Powell, 91 Cal. App. 1, where the power to spend public funds for such projects was upheld. See also Simon v. O'Toole, 108 N. J. L., 32, Affd. 108 N. J. L., 549.

In United States of America v. Certain Lands in Louisville, et al., 78 Fed. (2d), 684, it was held that, while such a project might be within the scope of a State's activities, it was not one which the Federal Government had power to undertake.

Analogies. The cases in this State, which, perhaps, afford the closest analogy, are the drainage cases, where land was permitted to be taken by eminent domain in the interest of public health, even where there was incidental benefit to private interests. (See E. G., matter of Ryers, 72 N. Y. 1; Board of Black River Regulating District v. Ogsbury, 203 A. D., 43; Affd. 235 N. Y., 600.)

"To take," said the court, "for the maintenance and promotion of the public health, is a public purpose." (Matter of Ryers, Supra, P. G. 7.) Over many years and in a multitude of cases, the courts have vainly attempted to define comprehensively the concept of a public use and to formulate a universal test. They have found here as elsewhere that to formulate anything ultimate, even though it were possible, would, in an inevitably changing world, be unwise if not futile.

Lacking a controlling precedent, we deal with the question as it presents itself on the facts at the present point of time.

"The law of each age is ultimately what that age thinks should be the law." (People ex rel Durham R. Corp. v. La Fetra, 230 N. Y. 429, 450.)

The fundamental purpose of government is to protect the health, safety and general welfare of the public. All its complicated activities have that simple end in view. Its power plant for the purpose consists of the power of taxation, the police power and the power of eminent domain.

Whenever there arises, in the State, a condition of affairs holding a substantial menace to the public health, safety or general welfare, it becomes the duty of the government to apply to it whatever power is necessary and appropriate to check the menace.

Slums. There are differences in the nature and characteristics of the powers, though distinction between them is often fine. (People ex rel. Durham R. Corp. v. La Fetra, supra, P. G. 444.) But if the menace is serious enough to the public to war-

(Continued on page 146)

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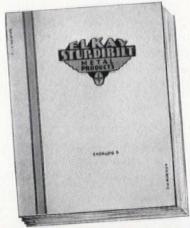
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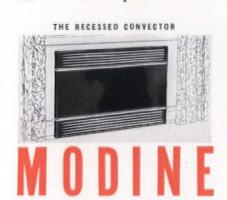
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HOUSING DECISION

(Continued from page 142)

rant public action, and the power applied is reasonably and fairly calculated to check it and bears a reasonable relation to the evil, it seems to be constitutionally immaterial whether one or another of the sovereign powers is employed.

The menace of the slums in New York City has been long recognized as serious enough to warrant public action. The session laws for nearly seventy years past are sprinkled with acts applying the taxing power and the police power in attempts to cure or check it.

The slums still stand. The menace still exists. What objections, then, can be urged to the application of the third power, least drastic, but as here embodied probably the most effective of all?

It is said that private enterprise, curbed by restrictive legislation under the police power, is adequate and alone appropriate. There is some authority to that effect in other States.

A sufficient answer should be the page of legislative history in this State and its result referred to above. Legislation merely restrictive in its nature has failed because the evil inheres not so much in this or that individual structure as in the character of a whole neighborhood of dilapidated and unsanitary structures.

Public Control. To eliminate the inherent evil and to provide housing facilities at low

cost—the two things necessarily go together — require large-scale operations which can be carried out only where there is power to deal in invitum with the occasional greedy individual owner seeking excessive profit by holding out.

The cure is to be wrought not through the regulated ownership of the individual but through the ownership and operation by or under the direct control of the public itself.

Nor is there anything novel in that. The modern city functions in the public interest as proprietor and operator of many activities formerly, and in some instances still, carried on by private enterprise.

It is also said that since the taking is to provide apartments to be rented to a class designated as "persons of low income," or to be leased or sold to limited-dividend corporations, the use is private and not public.

This objection disregards the primary purpose of the legislation. Use of a proposed structure, facility or service by everybody and anybody is one of the abandoned universal tests of a public use. (Mount Vernon-Woodbury Cotton Duck Co. v. Alabama Interstate Power Co. 240 U. S. 30, 32; Strickley v. Highland Boy Gold Mining Co., 200 U. S. 527; Rindge Co. v. County of Los Angeles, 262 U. S. 700; Fallbrook Irrigation District v. Bradley, 164 U. S. 112, 161-2.)

Justification. The designated class to whom incidental benefits will come are persons

with an income under \$2,500 a year, and it consists of two-thirds of the city's population. But the essential purpose of the legislation is not to benefit that class or any class; it is to protect and safeguard the entire public from the menace of the slums.

The so-called limited-dividend corporations referred to were provided for in the State Housing Law (Laws of 1926, Chapter 823), and embody another and different attempt to solve the problems. The constitutionality of the scheme was unsuccessfully attacked in the courts. (Mars Realty Corporation v. Sexton, 141 Misc 622; Roche v. Sexton, 268 N. Y. 594; C. F. Matter of Mount Hope Development Corporation v. James, 258 N. Y. 510.)

After ten years of experiment its use for economic reasons, has proved inadequate as a solution.

Nothing is better settled than that the property of one individual cannot, without his consent, be devoted to the private use of another, even when there is an incidental or colorable benefit to the public.

The facts here present no such case. In a matter of far-reaching public concern the public is seeking to take the defendant's property and to administer it as part of a project conceived and to be carried out in its own interest and for its own benefit. That is a public benefit and, therefore, at least as far as this case is concerned, a public use.

The order and judgment should be affirmed.

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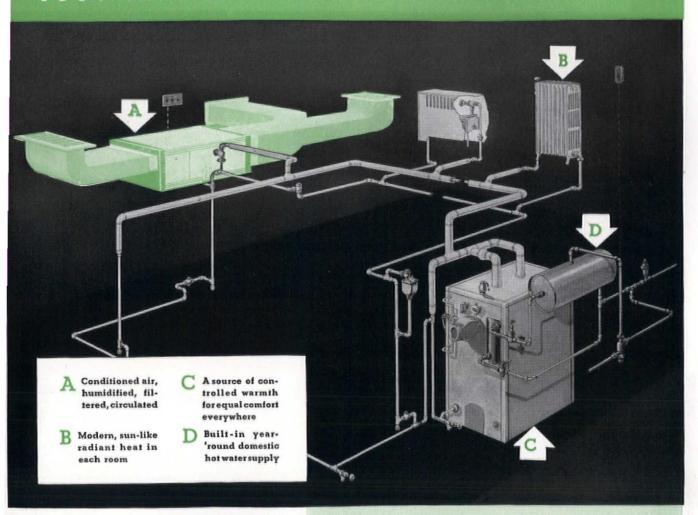
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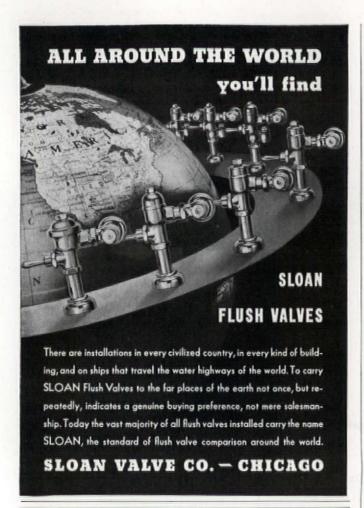


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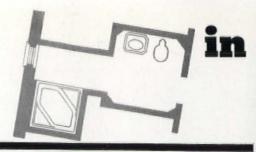
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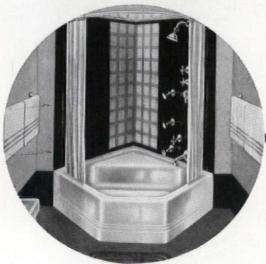


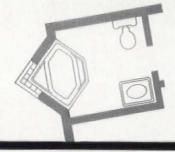


Reis Home

ENGLEWOOD, NEW JERSEY

The Neo-Angle Bath is featured in 54 homes, costing from \$5,500 to \$6,900, built by Reis Homes, Inc., and designed by Architect Stanley A. Leeks, Tenafly, New Jersey. The Neo-Angle was used in such a way that it provided extra closet space in the bathroom.

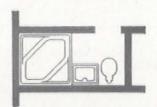




Home of Emmett Johnson TEANECK, NEW JERSEY

In this beautiful residence designed by Architect Erik Kaeyer, Yonkers, New York, the corner Neo-Angle is made the central theme of this attractive bathroom. Glass brick used in the wall back of the bath provides extra daylight. Cost of home, \$8,500.

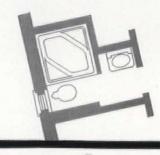




Hotel Taft NEW YORK CITY

One complete floor of this large hotel was modernized under the direction of the Bing & Bing management, to include Neo-Angle Baths in every suite. This floor has been especially popular with the guests.

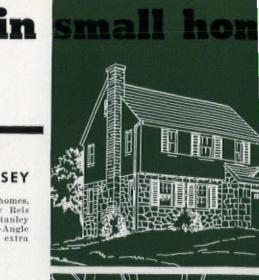




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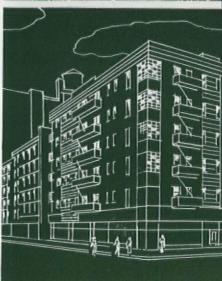
NEW YORK CITY

This apartment building, designed by Architects Leon & Lionel Levy, New York City, and built by Anthony Paterno, Builder, New York City, contains 40 one and a half room apartments, each with a Neo-Angle Bath. Approximately 4 feet of outside wall space was saved by using the Neo-Angle, the Architects say.









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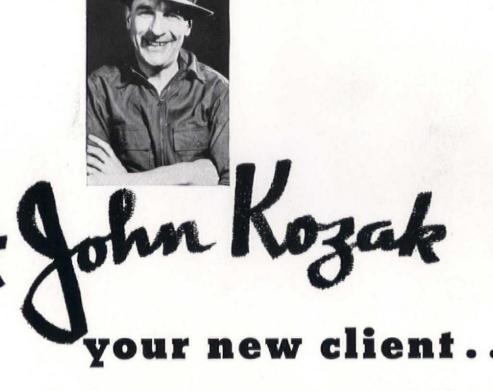
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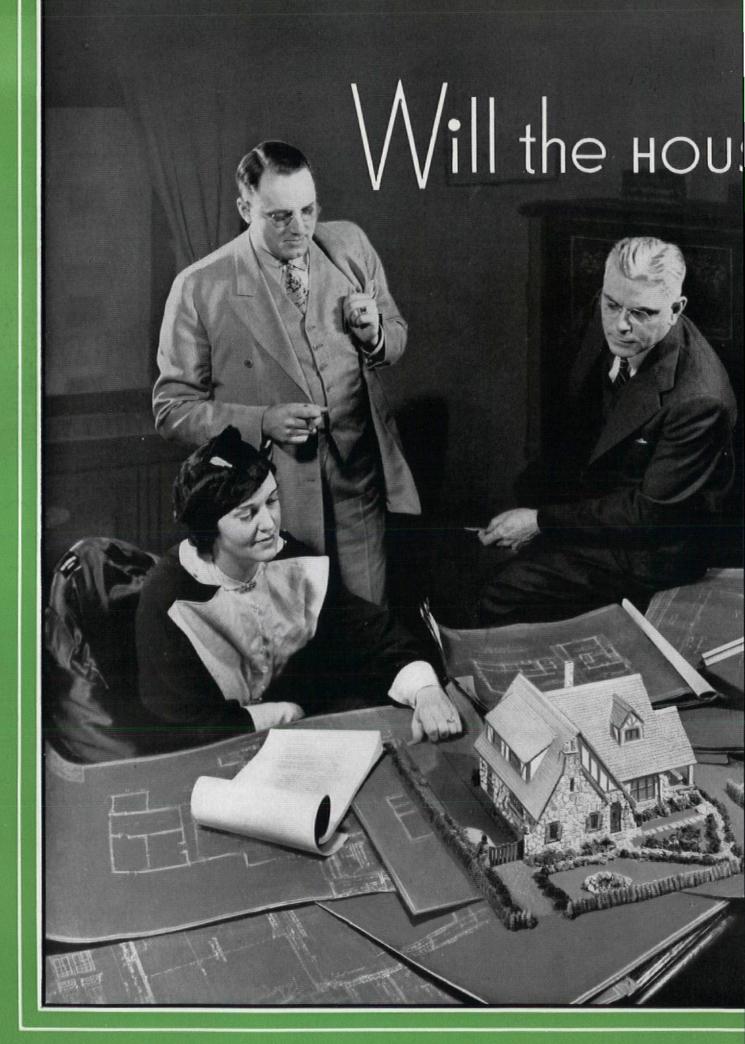
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